

PUBLIC NOTICE

Holston Army Ammunition Plant has applied to the Tennessee Air Pollution Control Division (TAPCD) for a renewal of their major source operating permit subject to the provisions of paragraph 1200-03-09-.02(11) of the Tennessee Air Pollution Control Regulations (also frequently referred to as Title V regulations). A major source (Title V) operating permit is required by both the Federal Clean Air Act and the Tennessee Air Pollution Control Regulations.

The applicant is **Holston Army Ammunition Plant** with a site address of 4509 West Stone Drive, Kingsport, TN. They seek to renew their major source operating permit for the manufacturing of explosives.

EPA has agreed to treat this draft Part 70 permit as a proposed Part 70 permit and to perform its 45-day review provided by the law concurrently with the public notice period. If any substantive comments are received, EPA's 45-day review period will cease to be performed concurrently with the public notice period. EPA's 45-day review period will start once the public notice period has been completed and EPA receives notification from the Tennessee Air Pollution Control Division that comments have been received and resolved. Whether EPA's 45-day review period is performed concurrently with the public comment period or after the public comment period has ended, the deadline for citizen's petitions to the EPA Administrator will be determined as if EPA's 45-day review period is performed after the public comment period has ended (i.e., sequentially).

The status regarding EPA's 45-day review of this project and the deadline for submitting a citizen petition can be found at the following website address:

<http://www.epa.gov/caa-permitting/tennessee-proposed-title-v-permits>

A copy of the application materials used by the TAPCD and a copy of the draft permit are available for public inspection during normal business hours at the following locations:

Kingsport Public Library
400 Broad Street
Kingsport, TN 37660

and

Tennessee Department of Environment and Conservation
Division of Air Pollution Control
William R. Snodgrass Tennessee Tower, 15th Floor
312 Rosa L. Parks Avenue
Nashville, Tennessee 37243

Also, if you require a copy of the draft permit it is available electronically by accessing the TDEC internet site located at:

<http://www.tn.gov/environment/topic/ppo-air>

Interested parties are invited to review these materials and comment. In addition, a public hearing may be requested at which written or oral presentations may be made. To be considered, written comments or requests for a public hearing must be made within thirty (30) days of the date of this notice and should be addressed to **Ms. Michelle Walker Owenby, Director**, Tennessee Division of Air Pollution Control, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 15th Floor, Nashville, Tennessee 37243. Questions concerning the source(s) may be addressed to Mr. Moe Baghernejad at the same address or by calling (615) 532-0554 or (615) 532-0594. A final determination will be made after weighing all relevant comments.

Individuals with disabilities who wish to participate in these proceedings or review information maintained at the above-mentioned depositories should contact the Tennessee Department of Environment and Conservation to discuss any auxiliary aids or services needed to facilitate such review. Such contact may be in person, by writing, telephone, or other means, and should be made no less than ten days prior to the end of the public comment period to allow time to provide such aid or services. Contact the Tennessee Department of Environment and Conservation ADA Coordinator, William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 2nd Floor, Nashville, Tennessee 37243, 1-866-253-5827. Hearing impaired callers may use the Tennessee Relay Service, 1-(800)-848-0298.

For the *Kingsport Times-News* -- publish once during the time period of May 11, 2016 through May 18, 2016

Air Pollution Control

Date: May 9, 2016

Assigned to – Moe Baghernejad

No alterations to the above are allowed:

Holston Army Ammunition Plant must pay to place this advertisement in the newspaper

Air Pollution Control must be furnished with an affidavit from the newspaper stating that the ad was run and the date of the ad or one complete sheet from the newspaper showing this advertisement, the name of the newspaper and the date of publication. Mail to Moe Baghernejad, Air Pollution Control Division, William R. Snodgrass Tennessee Tower, 15th Floor, 312 Rosa L. Parks Avenue, Nashville, Tennessee 37243.

TITLE V PERMIT RENEWAL STATEMENT

Facility Name:	Holston Army Ammunition Plant (HSAAP Area A Operations)
City:	Kingsport
County:	Sullivan

Date Application Received:	December 23, 2013
Date Application Deemed Complete:	October 24, 2014

Emission Source Reference No.:	82-0018
Permit No.:	568191

INTRODUCTION

This narrative is being provided to assist the reader in understanding the content of the attached Title V operating permit. This Title V Permit Statement is written pursuant to Tennessee Air Pollution Control Rule 1200-03-09-.02(11)(f)1.(v). The primary purpose of the Title V operating permit is to consolidate and identify existing state and federal air requirements applicable to Holston Army Ammunition Plant and to provide practical methods for determining compliance with these requirements. The following narrative is designed to accompany the Title V Operating Permit. It initially describes the facility receiving the permit, then the applicable requirements and their significance, and finally the compliance status with those applicable requirements. This narrative is intended only as an adjunct for the reviewer and has no legal standing. Any revisions made to the permit in response to comments received during the public participation process will be described in an addendum to this narrative.

Acronyms

PSD - Prevention of Significant Deterioration

NESHAP - National Emission Standards for Hazardous Air Pollutants
NSPS - New Source Performance Standards
MACT - Maximum Achievable Control Technology
NSR - New Source Review

I. Identification Information

A. Source Description

Listing and description of emission sources:

- 01-07: Fuel Burning Installation: (7) Coal Fired boilers for steam generation
28: Coal Storage and Handling Operations: unloading and conveying of coal from rail cars to feed silos of boilers.
34: Storage Tanks for Organic Acids Manufacturing: (9) chemical storage tanks
35: Storage Tanks for Organic Acids Manufacturing: (5) chemical storage tanks
37: Storage Tanks for Organic Acids Manufacturing: (23) chemical storage tanks
40: Acetic Anhydride Manufacturing Operation: (32) furnaces (natural gas /propane/ or process off gas fired) for chemical conversion of glacial acetic acid to acetic anhydride
41: Acetic Acid Distillation Operation: (8) distillation units for concentration of water/acetic acid mixture
42: Acetic Anhydride Manufacturing: (16) natural gas/ off gas fired furnaces for conversion of acetic acid to acetic anhydride
43: Acetic Acid Recovery System: feed heater for removal of acetic acid from sludge
44: Acetic Anhydride Refining Process: (9) refining units for refining acetic anhydride from acetic anhydride and acetic acid mixture
50: Coal Handling System: with coal crusher, conveyors, & screens
54: Fuel Burning Installation: (2) natural gas fired boilers for steam generation (no. 2 fuel oil back-up)

Permitting Activities Since Original Permit Issuance (Previous Permit 548016)

1. Minor modification to sources 40 and 42, use of waste heat recovery boilers (1 per 8 furnaces) in the flu gas stream from the furnaces.
2. Revised Conditions B5, C1, C2, and E2(b) .

Permitting Activities Since Previous Permit Issuance 558407

- (1) Revised Conditions A12, B5, and E2(b)

B. Facility Classification

1. Attainment or Non-Attainment Area Location

Area is designated as an attainment area for all criteria pollutants.

2. Company is located in a Class II area.

C. Regulatory Status

1. PSD/NSR

This facility is an existing major source under PSD.

2. Title V Major Source Status by Pollutant

Pollutant	Is the pollutant emitted?	If emitted, what is the facility's status?	
		Major Source Status	Non-Major Source Status
PM	y	y	
PM ₁₀	y	y	
SO ₂	y	y	
VOC	y	y	
NO _x	y	y	
CO	y	y	
Individual HAP	y	y	
Total HAPs	y	y	

3. MACT Standards

Industrial boilers : 40 CFR 63, Subpart DDDDD

4. Program Applicability

Are the following programs applicable to the facility?

PSD: yes

NESHAP: yes

NSPS: yes

II. Compliance Information

Compliance Status:

Is the facility currently in compliance with all applicable requirements? yes

Are there any applicable requirements that will become effective during the permit term? Yes

Industrial boilers, 40 CFR §63 Subpart DDDDD or the Boiler MACT:
Compliance date extended to 1-31-2017

III. Other Requirements

A. Emissions Trading

The facility is not involved in an emissions trading program.

B. Acid Rain Requirements

This facility is not subject to any requirements in Title IV of the Clean Air Act.

C. Prevention of Accidental Releases

This facility is subject to 40 CFR 68 as of June 21, 1999.

THE FOLLOWING AGENCIES WERE NOTIFIED OF THE TITLE V DRAFT PERMIT FOR THIS COMPANY:

1. EPA, Region IV
2. The NC Dept. of Environment and Natural Resources
3. Virginia Department of Environmental Quality
4. Kentucky Division for Air Quality

**STATE OF TENNESSEE
AIR POLLUTION CONTROL BOARD
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243**



OPERATING PERMIT (TITLE V) Issued Pursuant to Tennessee Air Quality Act

This permit fulfills the requirements of Title V of the Federal Clean Air Act (42 U.S.C. 7661a-7661e) and the federal regulations promulgated thereunder at 40 CFR Part 70. (FR Vol. 57, No. 140, Tuesday, July 21, 1992 p.32295-32312). This permit is issued in accordance with the provisions of paragraph 1200-03-09-.02(11) of the Tennessee Air Pollution Control Regulations. The permittee has been granted permission to operate an air contaminant source in accordance with emissions limitations and monitoring requirements set forth herein.

Date Issued:

Permit Number:

568191

Date Expires:

Issued To:

Installation

Address:

Holston Army Ammunition Plant
BAE Systems Ordnance Systems Inc.
(HSAAP Area A Operations)

4509 West Stone Drive
Kingsport

Installation Description:

Chemical Manufacturing of Acetic Anhydride and Concentration of Acetic Acid by Distillation:

01-07: Steam Generating Plant with (7) Coal Fired Boilers (B-8A-1)
28: Coal Storage and Handling Operations (B-8A) 41: Acetic Acid Distillation
Operation (B-2A-1)
34: Storage Tanks for Organic Acids Manufacturing (T-6A) 42: Acetic Anhydride
Manufacturing (B-20A)
35: Storage Tanks for Organic Acids Manufacturing (T-2A) 43: Acetic Acid Recovery
System (B-2A-2)
37: Storage Tanks for Organic Acids Manufacturing (T-27A) 44: Acetic Anhydride
Refining Process (B-6A-1)
40: Acetic Anhydride Manufacturing Operation (B-7A) 50: Coal Handling System (B-40A)
54: (2) Natural Gas Fired Boilers
(B-8-41A)

Emission Source Reference No.: 82-0018

Renewal Application Due Date:

Primary SIC: 28

Information Relied Upon:

Title V Permit renewal application dated December 16, 2013

(Continued on the next page)

DRAFT

TECHNICAL SECRETARY

No Authority is Granted by this Permit to Operate, Construct, or Maintain any Installation in Violation of any Law, Statute, Code, Ordinance, Rule, or Regulation of the State of Tennessee or any of its Political Subdivisions.

POST AT INSTALLATION ADDRESS

CN-0827 (Rev.2-13)

RDA-1298

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Condition E13-1 applies.

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E14. Coal Handling System (82-0018-50).

Conditions E14-1 through E14-3 apply.

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E15. Natural Gas Boilers (82-0018-54).

Conditions E15-1 through E15-7 apply.

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END OF PERMIT NUMBER 568191

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ATTACHMENT 1 Opacity Matrix Decision Tree for Visible Emission
Evaluation
by TVEE Method 2 and EPA Method 9, dated June 18, 1996
and Amended September 11, 2013
3 pages

ATTACHMENT 2 AP-42 Fifth Edition Table 1.1-1 for Coal
Combustion Emission Factors 4
pages

ATTACHMENT 3 AP-42 Tables for Natural Gas Combustion Emission
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ATTACHMENT 4 AP-42 Tables for Fuel Oil Combustion Emission Factors
5 pages

SECTION A

GENERAL PERMIT CONDITIONS

A permit issued under the provisions of paragraph 1200-03-09-.02(11) is a permit issued pursuant to the requirements of Title V of the Federal Act and its implementing Federal regulations promulgated at 40 CFR, Part 70.

- A1. Definitions.** Terms not otherwise defined in the permit shall have the meaning assigned to such terms in the referenced regulation.

TAPCR 1200-03

- A2. Compliance requirement.** All terms and conditions in a permit issued pursuant to paragraph 1200-03-09-.02(11) including any provisions designed to limit a source's potential to emit, are enforceable by the Administrator and citizens under the Federal Act.

The permittee shall comply with all conditions of its permit. Except for requirements specifically designated herein as not being federally enforceable (State Only), non-compliance with the permit requirements is a violation of the Federal Act and the Tennessee Air Quality Act and is grounds for enforcement action; for a permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application. Non-compliance with permit conditions specifically designated herein as not being federally enforceable (State Only) is a violation of the Tennessee Air Quality Act and may be grounds for these actions.

TAPCR 1200-03-09-.02(11) (e)2(i) and 1200-03-09-.02(11) (e)1(vi) (I)

- A3. Need to halt or reduce activity.** The need to halt or reduce activity is not a defense for noncompliance. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit. However, nothing in this item shall be construed as precluding consideration of a need to halt or reduce activity as a mitigating factor in assessing penalties for noncompliance if the health, safety or environmental impacts of halting or reducing operations would be more serious than the impacts of continuing operations.

TAPCR 1200-03-09-.02(11) (e)1(vi) (II)

- A4. The permit.** The permit may be modified, revoked, reopened, and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or of a notification of planned changes or anticipated noncompliance does not stay any permit condition.

TAPCR 1200-03-09-.02(11) (e)1(vi) (III)

- A5. Property rights.** The permit does not convey any property rights of any sort, or any exclusive privilege.

TAPCR 1200-03-09-.02(11) (e)1(vi) (IV)

- A6. Submittal of requested information.** The permittee shall furnish to the Technical Secretary, within a reasonable time, any information that the Technical Secretary may request in writing to determine whether cause exists for modifying, revoking and reissuing, or termination of the permit or to determine compliance with the permit. Upon request, the permittee shall also furnish to the Technical Secretary copies of records required to be kept by the permit. If the permittee claims that such information is confidential, the Technical Secretary may review that claim and hold the information in protected status until such time that the Board can hear any contested proceedings regarding confidentiality disputes. If the information is desired by EPA, the permittee may mail the information directly to EPA. Any claims of confidentiality for federal purposes will be determined by EPA.

TAPCR 1200-03-09-.02(11) (e)1(vi) (V)

- A7. Severability clause.** The requirements of this permit are severable. A dispute regarding one or more requirements of this permit does not invalidate or otherwise excuse the permittee from their duty to comply with the remaining portion of the permit.

TAPCR 1200-03-09.02(11) (e)1(v)

A8. Fee payment.

(a) The permittee shall pay an annual major source emission fee based upon the responsible official's choice of actual emissions or allowable emissions. An emission cap of 4,000 tons per year per regulated pollutant per major source SIC Code shall apply to actual or allowable based emission fees. A major source annual emission fee will not be charged for emissions in excess of the cap (s) or for carbon monoxide.

(b) Major sources who have filed a timely, complete operating permit application in accordance with 1200-03-09-.02(11), shall pay allowable emission based fees until the beginning of the next annual accounting period following receipt of their major source operating permit. At that time, the permittee shall begin paying their annual emission fee based upon their choice of actual or allowable based fees, or mixed actual and allowable based fees as stated under SECTION E of this permit. Once permitted, altering the existing choice shall be accomplished by a written request of the major source, filed in the office of the Technical Secretary at least one hundred eighty days prior to the expiration or reissuance of the major source operating permit.

(c) Major sources must conform to the following requirements with respect to fee payments:

1. If a major source choosing an allowable based annual emission fee wishes to restructure its allowable emissions for the purposes of lowering its annual emission fees, a mutually agreed upon, more restrictive regulatory requirement may be established to minimize the allowable emissions and thus the annual emission fee. The more restrictive requirement must be specified on the permit, and must include the method used to determine compliance with the limitation. The documentation procedure to be followed by the major source must also be included to insure that the limit is not exceeded. Restructuring the allowable emissions is permissible only in the annual accounting periods of eligibility and only, if the written request for restructuring is filed with the Technical Secretary at least 120 days prior to the beginning of the annual accounting period of eligibility. These periods of eligibility occur upon expiration of the initial major source operating permit, renewal of an expired major source operating permit or reissuance of a major source operating permit.

2. Major sources paying on allowable based emission fees will be billed by the Division no later than April 1 prior to the end of the accounting period. The major source annual emission fee is due July 1 following the end of the accounting period.

3. Major sources choosing an actual based annual emission fee shall file an actual emissions analysis with the Technical Secretary which summarizes the actual emissions of all regulated pollutants at the air contaminant sources of their facility. Based upon the actual emissions analysis, the source shall calculate the fee due and submit the payment and the analysis each July 1st following the end of the annual accounting period.

4. Major sources choosing a mixture of allowable and actual based emission fees shall file an actual emissions and allowable emissions analysis with the Technical Secretary which summarizes the actual and allowable emissions of all regulated pollutants at the air contaminant sources of their facility. Based upon the analysis, the source shall calculate the fee due and submit the payment and the analysis each July 1st following the end of the annual accounting period.

The mixed based fee shall be calculated utilizing the 4,000 ton cap specified in subparagraph 1200-03-26-.02(2) (i). In determining the tonnages to

be applied toward the regulated pollutant 4,000 ton cap in a mixed based fee, the source shall first calculate the actual emission based fees for a regulated pollutant and apply that tonnage toward the regulated pollutant's cap. The remaining tonnage available in the 4,000 ton category of a regulated pollutant shall be subject to allowable emission based fee calculations for the sources that were not included in the actual emission based fee calculations. Once the 4,000 ton cap has been reached for a regulated pollutant, no additional fee shall be required.

5. Major sources choosing to pay their major source annual emission fee based on actual based emissions or a mixture of allowable and actual based emissions may request an extension of time to file their emissions analysis with the Technical Secretary. The extension may be granted by the Technical Secretary up to ninety (90) days. The request for extension must be postmarked no later than July 1 or the request for extension shall be denied. The request for extension to file must state the reason and give an adequate explanation. An estimated annual emission fee payment of no less than eighty percent (80%) of the fee due July 1 must accompany the request for extension to avoid penalties and interest on the underpayment of the annual emission fee. A remaining balance due must accompany the emission analysis. If there has been an overpayment, a refund may be requested in writing to the Division or be applied as a credit toward next year's major source annual emission fee. The request for extension of time is not available to major sources choosing to pay their major source annual emission fee based on allowable emissions.

6. Newly constructed major sources or minor existing sources modifying their operations such that they become a major source in the midst of the standard July 1st to June 30th annual accounting period, shall pay allowable based annual emission fees for the fractional remainder of the annual accounting period commencing upon their start-up. At the beginning of the next annual accounting period, the "responsible official" of the source may choose to pay annual emission fees based on actual or allowable emissions or a mixture of the two as provided for in this rule 1200-03-26-.02.

(d) Where more than one (1) allowable emission limit is applicable to a regulated pollutant, the allowable emissions for the regulated pollutants shall not be double counted. Major sources subject to the provisions of paragraph 1200-03-26-.02(9) shall apportion their emissions as follows to ensure that their fees are not double counted.

1. Sources that are subject to federally promulgated hazardous air pollutant standards that can be imposed under Chapter 1200-03-11 or Chapter 1200-03-31 will place such regulated emissions in the specific hazardous air pollutant under regulation. If the pollutant is also in the family of volatile organic compounds or the family of particulates, the pollutant shall not be placed in that respective family category.

2. A miscellaneous category of hazardous air pollutants shall be used for hazardous air pollutants listed at part 1200-03-26-.02(2)(i)12 that do not have an allowable emission standard. A pollutant placed in this category shall not be subject to being placed in any other category such as volatile organic compounds or particulates.

3. Each individual hazardous air pollutant and the miscellaneous category of hazardous air pollutants is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

4. Major sources that wish to pay annual emission fees for PM₁₀ on an allowable emission basis may do so if they have a specific PM₁₀ allowable emission standard. If a major source has a total particulate emission standard, but wishes to pay annual emission fees on an actual PM₁₀ emission basis, it may do so if the PM₁₀ actual emission levels are proven to the satisfaction of the Technical Secretary. The method to demonstrate the actual PM₁₀ emission levels must be made as part of the source's major source

operating permit in advance in order to exercise this option. The PM₁₀ emissions reported under these options shall not be subject to fees under the family of particulate emissions. The 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i) shall also apply to PM₁₀ emissions.

TAPCR 1200-03-26-.02 (3) and (9) and 1200-03-09-.02(11)(e)1(vii)

- A9. Permit revision not required.** A permit revision will not be required under any approved economic incentives, marketable permits, emissions trading and other similar programs or process for changes that are provided for in the permit.

TAPCR 1200-03-09-.02(11)(e)1(viii)

- A10. Inspection and entry.** Upon presentation of credentials and other documents as may be required by law, the permittee shall allow the Technical Secretary or his authorized representative to perform the following for the purposes of determining compliance with the permit applicable requirements:

- (a) Enter upon, at reasonable times, the permittee's premises where a source is located or emissions-related activity is conducted, or where records must be kept under the conditions of the permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and air pollution control equipment), practices, or operations regulated or required under the permit; and
- (d) As authorized by the Clean Air Act and Chapter 1200-03-10 of TAPCR, sample or monitor at reasonable times substances or parameters for the purpose of assuring compliance with the permit or applicable requirements.
- (e) "Reasonable times" shall be considered to be customary business hours unless reasonable cause exists to suspect noncompliance with the Act, Division 1200-03 or any permit issued pursuant thereto and the Technical Secretary specifically authorizes an inspector to inspect a facility at any other time.

TAPCR 1200-03-09-.02(11)(e)3.(ii)

- A11. Permit shield.**

- (a) Compliance with the conditions of this permit shall be deemed compliance with all applicable requirements as of the date of permit issuance, provided that:
 - 1. Such applicable requirements are included and are specifically identified in the permit; or
 - 2. The Technical Secretary, in acting on the permit application or revision, determines in writing that other requirements specifically identified are not applicable to the source, and the permit includes the determination or a concise summary thereof.
- (b) Nothing in this permit shall alter or affect the following:
 - 1. The provisions of section 303 of the Federal Act (emergency orders), including the authority of the Administrator under that section. Similarly, the provisions of T.C.A. §68-201-109 (emergency orders) including the authority of the Governor under the section;
 - 2. The liability of an owner or operator of a source for any violation of applicable requirements prior to or at the time of permit issuance;
 - 3. The applicable requirements of the acid rain program, consistent with section 408(a) of the Federal Act; or
 - 4. The ability of EPA to obtain information from a source pursuant to section 114 of the Federal Act.
- (c) Permit shield is granted to the permittee.

TAPCR 1200-03-09-.02(11)(e)6

- A12. Permit renewal and expiration.**

a) An application for permit renewal must be submitted at least 180 days, but no more than 270 days, prior to the expiration of this permit. Permit expiration terminates the source's right to operate unless a timely and complete renewal application has been submitted.

(b) Provided that the permittee submits a timely and complete application for permit renewal the source will not be considered in violation of paragraph 1200-03-09-.02(11) until the Technical Secretary takes final action on the permit application, except as otherwise noted in paragraph 1200-03-09-.02(11).

(c) This permit, its shield provided in Condition A11, and its conditions will be extended and effective after its expiration date provided that the source has submitted a timely, complete renewal application to the Technical Secretary.

TAPCR 1200-03-09-.02(11) (f)3 and 2, 1200-03-09-.02(11) (d)1(i) (III), and 1200-03-09-.02(11) (a)2

A13. Reopening for cause.

(a) A permit shall be reopened and revised prior to the expiration of the permit under any of the circumstances listed below:

1. Additional applicable requirements under the Federal Act become applicable to the sources contained in this permit provided the permit has a remaining term of 3 or more years. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. No such reopening is required if the effective date of the requirement is later than the permit expiration date of this permit, unless the original has been extended pursuant to 1200-03-09-.02(11) (a)2.

2. Additional requirements become applicable to an affected source under the acid rain program.

3. The Technical Secretary or EPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emissions standards or other terms or conditions of the permit.

4. The Technical Secretary or EPA determines that the permit must be revised or revoked to assure compliance with the applicable requirements.

(b) Proceedings to reopen and issue a permit shall follow the same proceedings as apply to initial permit issuance and shall affect only those parts of the permit for which cause to reopen exists, and not the entire permit. Such reopening shall be made as expeditiously as practicable.

(c) Reopenings for cause shall not be initiated before a notice of such intent is provided to the permittee by the Technical Secretary at least 30 days in advance of the date that the permit is to be reopened except that the Technical Secretary may provide a shorter time period in the case of an emergency. An emergency shall be established by the criteria of T.C.A. 68-201-109 or other compelling reasons that public welfare is being adversely affected by the operation of a source that is in compliance with its permit requirements.

(d) If the Administrator finds that cause exists to terminate, modify, or revoke and reissue a permit as identified in A13, he is required under federal rules to notify the Technical Secretary and the permittee of such findings in writing. Upon receipt of such notification, the Technical Secretary shall investigate the matter in order to determine if he agrees or disagrees with the Administrator's findings. If he agrees with the Administrator's findings, the Technical Secretary shall conduct the reopening in the following manner:

1. The Technical Secretary shall, within 90 days after receipt of such notification, forward to EPA a proposed determination of termination, modification, or revocation and reissuance, as appropriate. If the Administrator grants additional time to secure permit applications or additional information from the permittee, the Technical Secretary shall have the additional time period added to the standard 90 day time period.

2. EPA will evaluate the Technical Secretary's proposed revisions and respond as to their evaluation.

3. If EPA agrees with the proposed revisions, the Technical Secretary shall proceed with the reopening in the same manner prescribed under Condition A13 (b) and Condition A13 (c).

4. If the Technical Secretary disagrees with either the findings or the Administrator that a permit should be reopened or an objection of the Administrator to a proposed revision to a permit submitted pursuant to Condition A13(d), he shall bring the matter to the Board at its next regularly scheduled meeting for instructions as to how he should proceed. The permittee shall be required to file a written brief expressing their position relative to the Administrator's objection and have a responsible official present at the meeting to answer questions for the Board. If the Board agrees that EPA is wrong in their demand for a permit revision, they shall instruct the Technical Secretary to conform to EPA's demand, but to issue the permit under protest preserving all rights available for litigation against EPA.

TAPCR 1200-03-09-.02(11)(f)6 and 7.

A14. Permit transference. An administrative permit amendment allows for a change of ownership or operational control of a source where the Technical Secretary determines that no other change in the permit is necessary, provided that the following requirements are met:

(a) Transfer of ownership permit application is filed consistent with the provisions of 1200-03-09-.03(6), and

(b) written agreement containing a specific date for transfer of permit responsibility, coverage, and liability between the current and new permittee has been submitted to the Technical Secretary.

TAPCR 1200-03-09-.02(11)(f)4(i)(IV) and 1200-03-09-.03(6)

A15. Air pollution alert. When the Technical Secretary has declared that an air pollution alert, an air pollution warning, or an air pollution emergency exists, the permittee must follow the requirements for that episode level as outlined in TAPCR 1200-03-09-.03(1) and TAPCR 1200-03-15-.03.

A16. Construction permit required. Except as exempted in TAPCR 1200-03-09-.04, or excluded in subparagraph TAPCR 1200-03-02-.01(1)(aa) or subparagraph TAPCR 1200-03-02-.01(1)(cc), this facility shall not begin the construction of a new air contaminant source or the modification of an air contaminant source which may result in the discharge of air contaminants without first having applied for and received from the Technical Secretary a construction permit for the construction or modification of such air contaminant source.

TAPCR 1200-03-09-.01(1)(a)

A17. Notification of changes. The permittee shall notify the Technical Secretary 30 days prior to commencement of any of the following changes to an air contaminant source which would not be a modification requiring a construction permit.

(a) change in air pollution control equipment

(b) change in stack height or diameter

(c) change in exit velocity of more than 25 percent or exit temperature of more than 15 percent based on absolute temperature.

TAPCR 1200-03-09-.02(7)

A18. Schedule of compliance. The permittee will comply with any applicable requirement that becomes effective during the permit term on a timely basis. If the permittee is not in compliance the permittee must submit a schedule for coming into compliance which must include a schedule of remedial measure(s), including an enforceable set of deadlines for specific actions.

TAPCR 1200-03-09-.02(11)(d)3 and 40 CFR Part 70.5(c)

A19. Title VI.

(a) The permittee shall comply with the standards for recycling and emissions reduction pursuant to 40 CFR, Part 82, Subpart F, except as provided for motor vehicle air conditioners (MVACs) in Subpart B:

1. Persons opening appliances for maintenance, service, repair, or disposal must comply with the required practices pursuant to Section 82.156.
2. Equipment used during the maintenance, service, repair, or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to Section 82.158.
3. Persons performing maintenance, service, repair, or disposal of appliances must be certified by an approved technician certification program pursuant to Section 82.161.

(b) If the permittee performs a service on motor (fleet) vehicles when this service involves ozone depleting substance refrigerant in the motor vehicle air conditioner (MVAC), the permittee is subject to all the applicable requirements as specified in 40 CFR, Part 82, Subpart B, Servicing of Motor Vehicle Air Conditioners.

(c) The permittee shall be allowed to switch from any ozone-depleting substance to any alternative that is listed in the Significant New Alternatives Program (SNAP) promulgated pursuant to 40 CFR, Part 82, Subpart G, Significant New Alternatives Policy Program.

A20. **112 (r).** The permittee shall comply with the requirement to submit to the Administrator or designated State Agency a risk management plan, including a registration that reflects all covered processes, by June 21, 1999, if the permittee's facility is required pursuant to 40 CFR, 68, to submit such a plan.

SECTION B

GENERAL CONDITIONS for MONITORING, REPORTING, and ENFORCEMENT

B1. **Recordkeeping.** Monitoring and related record keeping shall be performed in accordance with the requirements specified in the permit conditions for each individual permit unit. In no case shall reports of any required monitoring and record keeping be submitted less frequently than every six months.

(a) Where applicable, records of required monitoring information include the following:

1. The date, place as defined in the permit, and time of sampling or measurements;
2. The date(s) analyses were performed;
3. The company or entity that performed the analysis;
4. The analytical techniques or methods used;
5. The results of such analyses; and
6. The operating conditions as existing at the time of sampling or measurement.

(b) Digital data accumulation which utilizes valid data compression techniques shall be acceptable for compliance determination as long as such compression does not violate an applicable requirement and its use has been approved in advance by the Technical Secretary.

TAPCR 1200-03-09-.02(11)(e)1(iii)

B2. **Retention of monitoring data.** The permittee shall retain records of all required monitoring data and support information for a period of at least 5 years from the date of the monitoring sample, measurement, report, or application. Support information includes all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, and copies of all reports required by the permit.

TAPCR 1200-03-09-.02(11)(e)1(iii)(II)II

- B3. Reporting.** Reports of any required monitoring and record keeping shall be submitted to the Technical Secretary in accordance with the frequencies specified in the permit conditions for each individual permit unit. Reports shall be submitted within 60 days of the close of the reporting period unless otherwise noted. All instances of deviations from permit requirements must be clearly identified in such reports. All required reports must be certified by a responsible official. Reports required under "State only requirements" are not required to be certified by a responsible official.

TAPCR 1200-03-09-.02(11) (e)1(iii)

- B4. Certification.** Except for reports required under "State Only" requirements, any application form, report or compliance certification submitted pursuant to the requirements of this permit shall contain certification by a responsible official of truth, accuracy and completeness. This certification shall state that, based on information and belief formed after reasonable inquiry, the statements and information in the document are true, accurate and complete.

TAPCR 1200-03-09-.02(11) (d)4

- B5. Annual compliance certification.** The permittee shall submit annually compliance certifications with terms and conditions contained in Sections A, B, D and E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

(a) The identification of each term or condition of the permit that is the basis of the certification;

(b) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;

(c) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in B5(b) above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an *excursion or **exceedance as defined below occurred; and

(d) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* "Excursion" shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** "Exceedance" shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol. 79, No.144, July 28, 2014, pages 43661 through 43667

- B6. Submission of compliance certification.** The compliance certification shall be submitted to:

The Tennessee Department of Environment and Conservation Environmental Field Office specified in Section E of this permit	and	US EPA Region IV Air and EPCRA Enforcement Branch 61 Forsyth Street, SW Atlanta, Georgia 30303
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TAPCR 1200-03-09-.02 (11) (e) 3 (v) (IV)

B7. Emergency provisions. An emergency constitutes an affirmative defense to an enforcement action brought against this source for noncompliance with a technology based emission limitation due to unavoidable increases in emissions attributable to the emergency. An emergency shall not include noncompliance to the extent caused by improperly designed equipment, lack of preventative maintenance, careless or improper operation, or operator error.

(a) The affirmative defense of the emergency shall be demonstrated through properly signed, contemporaneous operating logs, or other relevant evidence that:

1. An emergency occurred and that the permittee can identify the probable cause(s) of the emergency. "Probable" must be supported by a credible investigation into the incident that seeks to identify the causes and results in an explanation supported by generally accepted engineering or scientific principles.

2. The permitted source was at the time being properly operated. In determining whether or not a source was being properly operated, the Technical Secretary shall examine the source's written standard operating procedures which were in effect at the time of the noncompliance and any other code as detailed below that would be relevant to preventing the noncompliance. Adherence to the source's standard operating procedures will be the test of adequate preventative maintenance, careless operation, improper operation or operator error to the extent that such adherence would prevent noncompliance.

The source's failure to follow recognized standards of practice to the extent that adherence to such a standard would have prevented noncompliance will disqualify the source from any claim of an emergency and an affirmative defense.

3. During the period of the emergency, the permittee took all reasonable steps to minimize levels of emissions that exceeded the emission standards, or other requirements in the permit.

4. The permittee submitted notice of the emergency to the Technical Secretary according to the notification criteria for malfunctions in rule 1200-03-20-.03. For the purposes of this condition, "emergency" shall be substituted for "malfunction(s)" in rule 1200-03-20-.03 to determine the relevant notification threshold. The notice shall include a description of the emergency, any steps taken to mitigate emissions, and corrective actions taken.

(b) In any enforcement proceeding the permittee seeking to establish the occurrence of an emergency has the burden of proof.

(c) The provisions of this condition are in addition to any emergency, malfunction or upset requirement contained in Division 1200-03 or other applicable requirement.

TAPCR 1200-03-09-.02 (11) (e) 7

B8. Excess emissions reporting.

(a) The permittee shall promptly notify the Technical Secretary when any emission source, air pollution control equipment, or related facility breaks down in such a manner to cause the emission of air contaminants in excess of the applicable emission standards contained in Division 1200-03 or any permit issued thereto, or of sufficient duration to cause damage to property or public health. The permittee must provide the Technical Secretary with a statement giving all pertinent facts, including the estimated duration of the breakdown. Violations of the visible emission standard which occur for less than 20 minutes in one day (midnight to midnight) need not be reported. Prompt notification will be within 24 hours of the malfunction and shall be provided by telephone to the Division's Nashville office.

The Technical Secretary shall be notified when the condition causing the failure or breakdown has been corrected. In attainment and unclassified areas if emissions other than from sources designated as significantly impacting on a nonattainment area in excess of the standards will not and do not occur over more than a 24-hour period (or will not recur over more than a 24-hour period) and no damage to property and or public health is anticipated, notification is not required.

(b) Any malfunction that creates an imminent hazard to health must be reported by telephone immediately to the Division's Nashville office at (615) 532-0554 and to the State Civil Defense.

(c) A log of all malfunctions, startups, and shutdowns resulting in emissions in excess of the standards in Division 1200-03 or any permit issued thereto must be kept at the plant. All information shall be entered in the log no later than twenty-four (24) hours after the startup or shutdown is complete, or the malfunction has ceased or has been corrected. Any later discovered corrections can be added in the log as footnotes with the reason given for the change. This log must record at least the following:

1. Stack or emission point involved
2. Time malfunction, startup, or shutdown began and/or when first noticed
3. Type of malfunction and/or reason for shutdown
4. Time startup or shutdown was complete or time the air contaminant source returned to normal operation
5. The company employee making entry on the log must sign, date, and indicate the time of each log entry

The information under items 1. and 2. must be entered into the log by the end of the shift during which the malfunction or startup began. For any source utilizing continuous emission(s) monitoring, continuous emission(s) monitoring collection satisfies the above log keeping requirement.

TAPCR 1200-03-20-.03 and .04

B9. Malfunctions, startups and shutdowns - reasonable measures required. The permittee must take all reasonable measures to keep emissions to a minimum during startups, shutdowns, and malfunctions. These measures may include installation and use of alternate control systems, changes in operating methods or procedures, cessation of operation until the process equipment and/or air pollution control equipment is repaired, maintaining sufficient spare parts, use of overtime labor, use of outside consultants and contractors, and other appropriate means. Failures that are caused by poor maintenance, careless operation or any other preventable upset condition or preventable equipment breakdown shall not be considered malfunctions. This provision does not apply to standards found in 40 CFR, Parts 60 (Standards of performance for new stationary sources), 61 (National emission standards for hazardous air pollutants) and 63 (National emission standards for hazardous air pollutants for source categories).

TAPCR 1200-03-20-.02

B10. Reserved.

B11. Report required upon the issuance of a notice of violation for excess emissions.

The permittee must submit within twenty (20) days after receipt of the notice of violation, the data shown below to assist the Technical Secretary in deciding whether to excuse or validate the violation. If this data has previously been available to the Technical Secretary prior to the issuance of the notice of violation no further action is required of the violating source. However, if the source desires to submit additional information, then this must be submitted within the same twenty (20) day time period. The minimum data requirements are:

- (a) The identity of the stack and/or other emission point where the excess emission(s) occurred;
- (b) The magnitude of the excess emissions expressed in pounds per hour and the units of the applicable emission limitation and the operating data and calculations used in determining the magnitude of the excess emissions;
- (c) The time and duration of the emissions;

- (d) The nature and cause of such emissions;
- (e) For malfunctions, the steps taken to correct the situation and the action taken or planned to prevent the recurrence of such malfunctions;
- (f) The steps taken to limit the excess emissions during the occurrence reported, and
- (g) If applicable, documentation that the air pollution control equipment, process equipment, or processes were at all times maintained and operated in a manner consistent with good operating practices for minimizing emissions.

Failure to submit the required report within the twenty (20) day period specified shall preclude the admissibility of the data for consideration of excusal for malfunctions.

TAPCR 1200-03-20-.06(2), (3) and (4)

SECTION C

PERMIT CHANGES

- C1. Operational flexibility changes.** The source may make operational flexibility changes that are not addressed or prohibited by the permit without a permit revision subject to the following requirements:
- (a) The change cannot be subject to a requirement of Title IV of the Federal Act or Chapter 1200-03-30.
 - (b) The change cannot be a modification under any provision of Title I of the federal Act or Division 1200-03.
 - (c) Each change shall meet all applicable requirements and shall not violate any existing permit term or condition.
 - (d) The source must provide contemporaneous written notice to the Technical Secretary and EPA of each such change, except for changes that are below the threshold of levels that are specified in Rule 1200-03-09-.04.
 - (e) Each change shall be described in the notice including the date, any change in emissions, pollutants emitted, and any applicable requirements that would apply as a result of the change.
 - (f) The change shall not qualify for a permit shield under the provisions of part 1200-03-09-.02(11)(e) 6.
 - (g) The permittee shall keep a record describing the changes made at the source that result in emissions of a regulated air pollutant subject to an applicable requirement, but not otherwise regulated under the permit, and the emissions resulting from those changes. The records shall be retained until the changes are incorporated into subsequently issued permits.

TAPCR 1200-03-09-.02(11)(a) 4 (ii)

- C2. Section 502(b)(10) changes.**
- (a) The permittee can make certain changes without requiring a permit revision, if the changes are not modifications under Title I of the Federal Act or Division 1200-03 and the changes do not exceed the emissions allowable under the permit. The permittee must, however, provide the Administrator and Technical Secretary with written notification within a minimum of 7 days in advance of the proposed changes. The Technical Secretary may waive the 7 day advance notice in instances where the source demonstrates in writing that an emergency necessitates the change. Emergency shall be demonstrated by the criteria of TAPCR 1200-03-09-.02(11)(e) 7 and in no way shall it include changes solely to take advantages of an unforeseen business opportunity. The Technical Secretary and EPA shall attach each such notice to their copy of the relevant permit.
 - (b) The written notification must be signed by a facility Title V responsible official and include the following:
 - 1. a brief description of the change within the permitted facility;
 - 2. the date on which the change will occur;
 - 3. a declaration and quantification of any change in emissions;

- 4. a declaration of any permit term or condition that is no longer applicable as a result of the change; and
 - 5. a declaration that the requested change is not a Title I modification and will not exceed allowable emissions under the permit.
- (c) The permit shield provisions of TAPCR 1200-03-09-.02(11)(e)6 shall not apply to Section 502(b)(10) changes.

TAPCR 1200-03-09-.02(11)(a)4 (i)

C3. Administrative amendment.

- (a) Administrative permit amendments to this permit shall be in accordance with 1200-03-09-.02(11)(f)4. The source may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request.
- (b) The permit shield shall be extended as part of an administrative permit amendment revision consistent with the provisions of TAPCR 1200-03-09-.02(11)(e)6 for such revisions made pursuant to item (c) of this condition which meet the relevant requirements of TAPCR 1200-03-09-.02(11)(e), TAPCR 1200-03-09-.02(11)(f) and TAPCR 1200-03-09-.02(11)(g) for significant permit modifications.
- (c) Proceedings to review and grant administrative permit amendments shall be limited to only those parts of the permit for which cause to amend exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)4

C4. Minor permit modifications.

- (a) The permittee may submit an application for a minor permit modification in accordance with TAPCR 1200-03-09-.02(11)(f)5(ii).
- (b) The permittee may make the change proposed in its minor permit modification immediately after an application is filed with the Technical Secretary.
- (c) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.
- (d) Minor permit modifications do not qualify for a permit shield.

TAPCR 1200-03-09-.02(11)(f)5(ii)

C5. Significant permit modifications.

- (a) The permittee may submit an application for a significant modification in accordance with TAPCR 1200-03-09-.02(11)(f)5(iv).
- (b) Proceedings to review and modify permits shall be limited to only those parts of the permit for which cause to modify exists, and not the entire permit.

TAPCR 1200-03-09-.02(11)(f)5(iv)

C6. New construction or modifications.

Future construction at this facility that is subject to the provisions of TAPCR 1200-03-09-.01 shall be governed by the following:

- (a) The permittee shall designate in their construction permit application the route that they desire to follow for the purposes of incorporating the newly constructed or modified sources into their existing operating permit. The Technical Secretary shall use that information to prepare the operating permit application submittal deadlines in their construction permit.
- (b) Sources desiring the permit shield shall choose the administrative amendment route of TAPCR 1200-03-09-.02(11)(f)4 or the significant modification route of TAPCR 1200-03-09-.02(11)(f)5(iv).
- (c) Sources desiring expediency instead of the permit shield shall choose the minor permit modification procedure route of TAPCR 1200-03-09-.02(11)(f)5(ii) or group processing of minor modifications under the provisions of TAPCR 1200-03-09-.02(11)(f)5(iii) as applicable to the magnitude of their construction.

TAPCR 1200-03-09-.02(11)(d) 1(i)(V)

SECTION D

GENERAL APPLICABLE REQUIREMENTS

- D1. Visible emissions.** With the exception of air emission sources exempt from the requirements of TAPCR Chapter 1200-03-05 and air emission sources for which a different opacity standard is specifically provided elsewhere in this permit, the permittee shall not cause, suffer, allow or permit discharge of a visible emission from any air contaminant source with an opacity in excess of twenty (20) percent for an aggregate of more than five (5) minutes in any one (1) hour or more than twenty (20) minutes in any twenty-four (24) hour period; provided, however, that for fuel burning installations with fuel burning equipment of input capacity greater than 600 million btu per hour, the permittee shall not cause, suffer, allow, or permit discharge of a visible emission from any fuel burning installation with an opacity in excess of twenty (20) percent (6-minute average) except for one six minute period per one (1) hour of not more than forty (40) percent opacity. Sources constructed or modified after July 7, 1992 shall utilize 6-minute averaging.

Consistent with the requirements of TAPCR Chapter 1200-03-20, due allowance may be made for visible emissions in excess of that permitted under TAPCR 1200-03-05 which are necessary or unavoidable due to routine startup and shutdown conditions. The facility shall maintain a continuous, current log of all excess visible emissions showing the time at which such conditions began and ended and that such record shall be available to the Technical Secretary or his representative upon his request.

TAPCR 1200-03-05-.01(1), TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.02(1)

- D2. General provisions and applicability for non-process gaseous emissions.** Any person constructing or otherwise establishing a non-portable air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize the best equipment and technology currently available for controlling such gaseous emissions.

TAPCR 1200-03-06-.03(2)

- D3. Non-process emission standards.** The permittee shall not cause, suffer, allow, or permit particulate emissions from non-process sources in excess of the standards in TAPCR 1200-03-06.

- D4. General provisions and applicability for process gaseous emissions.** Any person constructing or otherwise establishing an air contaminant source emitting gaseous air contaminants after April 3, 1972, or relocating an air contaminant source more than 1.0 km from the previous position after November 6, 1988, shall install and utilize equipment and technology which is deemed reasonable and proper by the Technical Secretary.

TAPCR 1200-03-07-.07(2)

- D5. Particulate emissions from process emission sources.** The permittee shall not cause, suffer, allow, or permit particulate emissions from process sources in excess of the standards in TAPCR 1200-03-07.

- D6. Sulfur dioxide emission standards.** The permittee shall not cause, suffer, allow, or permit Sulfur dioxide emissions from process and non-process sources in excess of the standards in TAPCR 1200-03-14. Regardless of the specific emission standard, new process sources shall utilize the best available control technology as deemed appropriate by the Technical Secretary of the Tennessee Air Pollution Control Board.

- D7. Fugitive Dust.**
(a) The permittee shall not cause, suffer, allow, or permit any materials to be handled, transported, or stored; or a building, its appurtenances, or a road to be

used, constructed, altered, repaired, or demolished without taking reasonable precautions to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to, the following:

1. Use, where possible, of water or chemicals for control of dust in demolition of existing buildings or structures, construction operations, grading of roads, or the clearing of land;
2. Application of asphalt, oil, water, or suitable chemicals on dirt roads, material stock piles, and other surfaces which can create airborne dusts;

3. Installation and use of hoods, fans, and fabric filters to enclose and vent the handling of dusty materials. Adequate containment methods shall be employed during sandblasting or other similar operations.

(b) The permittee shall not cause, suffer, allow, or permit fugitive dust to be emitted in such manner to exceed five (5) minutes per hour or twenty (20) minutes per day as to produce a visible emission beyond the property line of the property on which the emission originates, excluding malfunction of equipment as provided in Chapter 1200-03-20.

TAPCR 1200-03-08

D8. Open burning. The permittee shall comply with the TAPCR 1200-03-04 for all open burning activities at the facility.

TAPCR 1200-03-04

D9. Asbestos. Where applicable, the permittee shall comply with the requirements of 1200-03-11-.02(2)(d) when conducting any renovation or demolition activities at the facility.

TAPCR 1200-03-11-.02(2)(d) and 40 CFR, Part 61

D10. Annual certification of compliance. The generally applicable requirements set forth in Section D of this permit are intended to apply to activities and sources that are not subject to source-specific applicable requirements contained in State of Tennessee and U.S. EPA regulations. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related record keeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1.(iii) and 1200-03-10-.04(2)(b)1 and compliance requirements of TAPCR 1200-03-09-.02(11)(e)3.(i). The permittee shall submit compliance certification for these conditions annually.

SECTION E

SOURCE SPECIFIC EMISSION STANDARDS, OPERATING LIMITATIONS, and MONITORING, RECORDKEEPING and REPORTING REQUIREMENTS

82-0018	Facility Description:	Holston Army Ammunition Plant (HSAAP) is a Federal Government owned, contractor operated, facility that manufactures RDX and HMX explosives for national defense purposes. The Area A operations in Sullivan County (82-0018) produce acetic anhydride and concentrated acetic acid for use in explosives production at the HSAAP Area B located in Hawkins County (37-0028). The Area A chemical manufacturing operations are supported with natural gas fired and/ or coal-fired steam generating boilers.
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Conditions E1 through E3 apply to all sources in Section E of this permit unless otherwise noted.

E1. Fee payment: actual emissions basis.

Note: for fees facility source nos. 37-0028 (Area B) and 82-0018 (Area A) are combined.

FEE EMISSIONS SUMMARY TABLE FOR MAJOR SOURCES 37-0028 and 82-0018

REGULATED POLLUTANTS	ALLOWABLE EMISSIONS (tons per AAP)	ACTUAL EMISSIONS (tons per AAP)	COMMENTS
PARTICULATE MATTER (PM)	N/A	AEAR	Includes all fee emissions.
PM ₁₀	N/A	N/A	
SO ₂	N/A	AEAR	Includes all fee emissions.
VOC	N/A	AEAR	Includes all fee emissions.
NO _x	N/A	AEAR	Includes all fee emissions.
CATEGORY OF MISCELLANEOUS HAZARDOUS AIR POLLUTANTS (HAP WITHOUT A STANDARD)*			
VOC FAMILY GROUP	N/A		.
NON-VOC GASEOUS GROUP	N/A		
PM FAMILY GROUP	N/A		
CATEGORY OF SPECIFIC HAZARDOUS AIR POLLUTANTS (HAP WITH A STANDARD)**			
VOC FAMILY GROUP	N/A		
NON-VOC GASEOUS GROUP	N/A		
PM FAMILY GROUP	N/A		
CATEGORY OF NSPS POLLUTANTS NOT LISTED ABOVE***			
EACH NSPS POLLUTANT NOT LISTED ABOVE	N/A	N/A	

1. For emission fee purposes, annual emissions for the accounting period from July 1 to June 30 for each emission year shall be maintained in the emission calculation records. These records must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative. These records must be retained for a period of not less than five (5) years. The procedures for quantifying actual emission rates for the sources contained in the permit shall be specified in a table submitted with the fee calculations for the first submission

NOTES

- AAP** The **Annual Accounting Period (AAP)** is a twelve (12) consecutive month period that begins each July 1st and ends June 30th of the following year. The present Annual Accounting Period began July 1, 2015 and ends June 30, 2016. The next Annual Accounting Period begins July 1, 2016 and ends June 30, 2017.
- N/A** N/A indicates that no emissions are specified for fee computation.
- AEAR** **AEAR** indicates that an **Actual Emissions Analysis** is **Required** to determine the actual emissions of:
- (1) **each regulated pollutant** (Particulate matter, SO₂, VOC, NO_x, and so forth. See TAPCR 1200-03-26-.02(2)(i) for the definition of a regulated pollutant.),
 - (2) **each pollutant group** (VOC Family, Non-VOC Gaseous, and Particulate Family), and
 - (3) the Miscellaneous HAP **Category** under consideration during the **Annual Accounting Period**.
- *** **Category Of Miscellaneous HAP (HAP Without A Standard):** This category is made-up of hazardous air pollutants that do not have a federal or state standard. Each HAP is classified into one of three groups, the **VOC Family** group, the **Non-VOC Gaseous** group, or the **Particulate (PM) Family** group. For fee computation, the **Miscellaneous HAP Category** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).
- **** **Category Of Specific HAP (HAP With A Standard):** This category is made-up of hazardous air pollutants (HAP) that are subject to Federally promulgated Hazardous Air Pollutant Standards that can be imposed under Chapter 1200-3-11 or Chapter 1200-03-31. Each individual hazardous air pollutant is classified into one of three groups, the **VOC Family** group, the **Non-VOC Gaseous** group, or the **Particulate (PM) Family** group. For fee computation, each individual hazardous air pollutant of the **Specific HAP Category** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).
- ***** **Category Of NSPS Pollutants Not Listed Above:** This category is made-up of each **New Source Performance Standard (NSPS)** pollutant whose emissions are not included in the **PM, SO₂, VOC or NO_x** emissions from each source in this permit. For fee computation, each **NSPS pollutant not listed above** is subject to the 4,000 ton cap provisions of subparagraph 1200-03-26-.02(2)(i).

END NOTES

- The permittee shall:**
- (1) Pay major source annual **actual based emission fees**, as requested by the responsible official for each **annual accounting period (AAP)** by July 1 of each year, beginning July 1, **2016** of the **current annual accounting period**.
 - (2) Prepare an **actual emissions analysis** beginning July 1, **2016** in accordance with the above **Fee Emissions Summary Table** for each AAP (July 1 of each year through June 30 of the

following year). The **actual emissions analysis** shall include:

- (a) the completed **Fee Emissions Summary Table**,
 - (b) each **AEAR** required by the above **Fee Emissions Summary Table**, and
 - (c) the records required by *E4-2, E4-3, E9-2, E14-1, E15-3, E15-4, E15-5, and E15-6* of this permit. These records shall be used to complete the **AEARs** required by the above **Fee Emissions Summary Table**.
- (3) Submit the **actual emissions analysis** at the time the fees are paid in full.
- (4) Calculate the fee due based upon the **actual emissions analysis**, and submit the payment on July 1st following the end of the **annual accounting period**. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within fifteen (15) days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8). Major sources may request an extension of time to file their emissions analysis with the Technical Secretary as specified in Condition A8(c)5 of this permit. Emissions for regulated pollutants shall not be double counted as specified in Condition A8(d) of this permit.

The Tennessee Air Pollution Control Division will bill the permittee no later than April 1 prior to the end of each **annual accounting period**. The annual emission fee is due July 1 following the end of each **annual accounting period**. If any part of any fee imposed under TAPCR 1200-03-26-.02 is not paid within fifteen (15) days of the due date, penalties shall at once accrue as specified in TAPCR 1200-03-26-.02(8) except as provided by 1200-03-26-.02(9)(g). Emissions for regulated pollutants shall not be double counted as specified in Condition A8(d) of this permit.

Payment of the fee due and the actual emissions analysis shall be submitted to The Technical Secretary at these addresses.

Payment for Fee to		Actual Emissions Analysis to
The Tennessee Department of Environment and Conservation Division of Fiscal Services Consolidated Fee Section - APC William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 10 th Floor Nashville, Tennessee 37243	and	The Tennessee Department of Environment and Conservation Division of Air Pollution Control East Tennessee Permit Program William R. Snodgrass Tennessee Tower 312 Rosa L. Parks Avenue, 15 th Floor Nashville, Tennessee 37243

TAPCR 1200-03-26-.02 (3) and (9), and 1200-03-09-.02(11)(e)1(vii)

E2. Reporting requirements.

(a) **Semiannual reports.** In order to maintain the same reporting schedule as established in the initial Title V permit, the first report for this renewal shall cover the following permits and time periods:

Permit	Report period begins	Report period ends
558407 (existing)	January 1, 2016	Day before issuance date of permit 568191

568191 (renewal)	Issuance date of permit 568191	June 30, 2016
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The report covering the full 6 month period shall be submitted within 60 days after June 30, 2016. Subsequent reports revert fully to permit #568191 and shall be submitted within 60 days after the end of each 6-month period following the first report. Semiannual periods continue to cover the periods January through June and July through December of every year.

Semiannual reports of this facility (**82-0018**) shall include:

- (1) Any monitoring and recordkeeping required by Conditions **E4-2, E4-3, E9-2, E14-1, E15-3, E15-4, E15-5, and E15-6** of this permit. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.
- (2) The visible emission evaluation readings from Conditions **E4-4, E5-1, E5-2, E6-1, E7-1, E8-1, E9-3, E10-1, E11-1, E12-1, E13-1, E14-2, and E15-7** of this permit if required by the opacity matrix. However, a summary report of this data is acceptable provided there is sufficient information to enable the Technical Secretary to evaluate compliance.
- (3) Identification of all instances of deviations from **ALL PERMIT REQUIREMENTS**.

These reports must be certified by a responsible official consistent with Condition B4 of this permit and shall be submitted to Knoxville Environmental Field Office at the address in Condition E2(b) of this permit.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

(b) Annual compliance certification. The permittee shall submit annually compliance certifications with terms and conditions contained in Sections A, B, D and E of this permit, including emission limitations, standards, or work practices. This compliance certification shall include all of the following (provided that the identification of applicable information may cross-reference the permit or previous reports, as applicable):

- (1) The identification of each term or condition of the permit that is the basis of the certification;
- (2) The identification of the method(s) or other means used by the owner or operator for determining the compliance status with each term and condition during the certification period; such methods and other means shall include, at a minimum, the methods and means required by this permit. If necessary, the owner or operator also shall identify any other material information that must be included in the certification to comply with section 113(c)(2) of the Federal Act, which prohibits knowingly making a false certification or omitting material information;
- (3) The status of compliance with the terms and conditions of the permit for the period covered by the certification, including whether compliance during the period was continuous or intermittent. The certification shall be based on the method or means designated in E2(b)2 above. The certification shall identify each deviation and take it into account in the compliance certification. The certification shall also identify as possible exceptions to compliance any periods during which compliance is required and in which an *excursion or **exceedance as defined below occurred; and
- (4) Such other facts as the Technical Secretary may require to determine the compliance status of the source.

* "Excursion" shall mean a departure from an indicator range established for monitoring under this paragraph, consistent with any averaging period specified for averaging the results of the monitoring.

** "Exceedance" shall mean a condition that is detected by monitoring that provides data in terms of an emission limitation or standard and that indicates that emissions (or opacity) are greater than the applicable emission limitation or standard (or less than the applicable standard in the case of a percent reduction requirement) consistent with any averaging period specified for averaging the results of the monitoring.

In order to maintain the same reporting schedule established in the initial Title V permit, the first certification for this renewal shall cover the following permits and time periods:

Permit	Certification period begins	Certification period ends
558407 (existing)	January 1, 2016	Day before issuance date of permit 568191
568191 (renewal)	Issuance date of permit 568191	December 31, 2016

The certification covering the full 12 month period shall be submitted within 60 days (due date: March 1, 2017) after **December 31, 2016**. Subsequent certifications revert fully to permit #568191 and shall be submitted within 60 days after the end of each 12-month period following the first certification.

These certifications shall be submitted to: **TN APCD** and **EPA**

The Tennessee Department of Environment and Conservation and Air and EPCRA Enforcement Branch
 Johnson City Environmental Field Office US EPA Region IV
 Division of Air Pollution Control 61 Forsyth Street, SW
 2305 Silverdale Road Atlanta, GA 30303
 Johnson City, TN 37601

As an alternative to submittal of paper copies of the Title V Semiannual Reports, and Title V Annual Compliance certifications by mail or commercial carrier service, the permittee may elect to submit these reports electronically in Adobe Portable Document Format (PDF) to the following e-mail address:

apc.jcefo@tn.gov

The electronically-submitted report must comply with the specified deadlines as required for a paper copy submittal. Also, the electronic report submittal must include a scanned copy of the signature of the responsible official certifying the report. A color copy of the document with blue ink signatures is preferred, but a black-and-white submittal is acceptable. The Air Pollution Control e-mail address will send an automatic reply to verify that the electronic submittal was received. If an automatic reply is not received, you may wish to re-send or confirm that the e-mail submittal was received by contacting the Division of Air Pollution Control at (865) 594-6035.

40 CFR Part 70.6(c)(5)(iii) as amended in the Federal Register Vol. 79, No.144, July 28, 2014, pages 43661 through 43667

- (c) **112(r) Certification** In addition, the facility shall submit to the Technical Secretary by January 31 of each year the compliance certification required by TAPCR 1200-03-32-.03(3) (adherence to the submitted accidental release plan for facilities subject to Section 112(r) of the federal Clean Air Act).

These reports must be certified by a responsible official consistent with condition B4 of this permit and shall be submitted to The Technical Secretary at the address in Condition E2(c) of this permit.

- (d) **Retention of Records** All records required by any condition in Section E of this permit must be retained for a period of not less than five years. Additionally, these records shall be kept available for inspection by the Technical Secretary or representative.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E3. Identification of Responsible Official, Technical Contact, and Billing Contact of the permitted facility:

- a) The application that was utilized in the preparation of this permit is dated December 16, 2013, and signed by Mr. Robert E. Winstead, Director, Environmental Health Safety and Security (EHSS) BAE Systems Ordnance Systems Inc., who was the Responsible Official of the permitted facility. If this person terminates

employment or is assigned different duties and is no longer a Responsible Official for this facility as defined in part 1200-03-09-.02(11)(b)21 of the Tennessee Air Pollution Control Regulations, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Responsible Official and certification of truth and accuracy. All representations, agreement to terms and conditions, and covenants made by the former Responsible Official that were used in the establishment of the permit terms and conditions will continue to be binding on the facility until such time that a revision to this permit is obtained that would change said representations, agreements, and/or covenants.

b) The application that was utilized in the preparation of this permit is dated December 16, 2013, and identifies James Ogle, Environmental Affairs Specialist as the Principal Technical Contact for the permitted facility. If this person terminates employment or is assigned different duties and is no longer the Principal Technical Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Principal Technical Contact and certification of truth and accuracy.

c) The application that was utilized in the preparation of this permit is dated December 16, 2013, and identifies Jerry Andrieszyn, Financial Analyst as the Billing Contact for the permitted facility. If this person terminates employment or is assigned different duties and is no longer the Billing Contact for this facility, the owner or operator of this air contaminant source shall notify the Technical Secretary of the change. Said notification must be in writing and must be submitted within thirty (30) days of the change. The notification shall include the name and title of the new Billing Contact and certification of truth and accuracy.

TAPCR 1200-03-09-.02(6)

E3-1. Emissions control equipment shall be operating when the sources are operating, except in accordance with TAPCR 1200-03-20 (see condition B8). TAPCR 1200-03-09-.03(8)

E3-2. Recordkeeping: Data Entry Requirements

Recordkeeping requirements for the permittee, including all data and calculations, must be updated and maintained based on the following schedule:

<u>Recordkeeping Type</u>	<u>Update Requirement</u>
Monthly Log	Recorded within 30 days after the end of the month
Weekly Log	Recorded within 7 days after the end of the week
Daily Log	Recorded within 7 days after the end of the day

TAPCR 1200-03-10-.02(2)(a)

Compliance Method: Maintain the recordkeeping schedule as required.

E3-3. This facility shall comply with all applicable state and federal air pollution regulations. This includes, but is not limited to, federal regulations published under 40 CFR 63 for sources of hazardous air pollutants and 40 CFR 60, New Source Performance Standards. TAPCR 1200-03-09-.03(8).

82-0018-01-07	Source Description:	<u>Steam Generating Plant with (7) Coal Fired Boilers (PES B-8A-1)</u>
Heat Input capacity rating (nominal): six (6) coal-fired units at 160 million Btu/hour each and one (1) coal-fired unit at 276 million Btu/hour.		
1236 Million Btu/Hour Nominal Heat Input Capacity (Total)		
Electrostatic Precipitators and Cyclones for Emissions Control		

E4. Conditions E4-1 through E4-6 apply to source 82-0018-01-07

E4-1. This fuel burning installation consists of six (6) Springfield Boiler Company spreader stoker type boilers and one (1) Combustion Engineering pulverized coal boiler. The normal fuel is coal, while no. 2 or no. 6 fuel oil also may be burned in the Combustion Engineering boiler. In addition, limited amounts (less than 5 percent of coal consumption) of coal tar, oily rags, non-hazardous solvents, and secure paper documents may be burned. High efficiency cyclones and electrostatic precipitators are used for particulate control.

The permittee is placed on notice that the National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial and Institutional Boilers and Process Heaters (40 CFR 63 Subpart DDDDD or the Boiler MACT) were promulgated by the US EPA and subsequently vacated and remanded to EPA by a federal court decision on June 8, 2007. Should the Boiler MACT (or a replacement for it) be reinstated, re-promulgated, or otherwise become effective during the permit term and any boilers or process heaters in the facility become subject to the rule, then this permit will be re-opened or revised as required to incorporate all new applicable requirements in this condition. The Division may utilize the minor permit modification and/or re-opening for cause to install the relevant standard conditions and compliance options unless the facility wishes to utilize compliance options not explicitly stated in the standard. In this case, the facility will apply for a significant modification or follow appropriate procedures per EPA guidance to install the desired conditions and compliance options in the permit. Some compliance options such as emissions averaging may preclude minor modification. In addition, the permittee is placed on notice that the operation of this source may be subject to the requirements of section 112(j) of the federal Clean Air Act, if applicable.

The regulatory provisions for hollow permits for MACT are specified under 1200-03-31-.04(1)(a) and (b) of TAPCR. The intent of the APC Board for case by case determinations for HAPS control requirements is specified under 1200-03-31-.03(1) of TAPCR. Under this provision the following is pertinent:

" the Technical Secretary shall recognize any federal law, federal regulation or lawfully promulgated policy of the US EPA pertaining to case by case determinations of a hazardous air pollutant requirements as the minimum acceptable criteria prior to the setting of a case by case hazardous air pollutant requirement under the provision of this rule."

TAPCR 1200-03-09-.03(8)

E4-2. Particulate matter emitted from this source shall not exceed 0.1 pounds per million Btu.

TAPCR 1200-03-06-.02(1); TAPCR 1200-03-19-.05

Compliance Method: The total power input to the ESPs will be monitored hourly and a 24-hour average of total power input to the ESPs will be determined for each boiler. The total power input shall be recorded in either electronic or manual format. Compliance with the particulate emission limit shall be assured by maintaining a total power input of 21 KW or higher. Deviations from the 24-hour average of a minimum 21 KW total power input shall be explained in the semiannual reports of condition E2.

The relationship between power input and particulate emissions was developed during stack testing conducted on boiler #2 during the weeks of July 20, 1998 and August 3, 1998.

TAPCR 1200-3-9-.02(11) (e)1(iii)

E4-3. Sulfur dioxide (SO₂) emitted from this source shall not exceed 2.4 pounds per million Btu, one hour average.

TAPCR 1200-03-14-.02(1) (a)

Compliance Method: Compliance with the SO₂ emission limit will be assured by monitoring of the sulfur content of the coal and the no. 6 fuel oil to maintain a maximum coal sulfur content of 1.5 percent and a maximum no. 6 fuel oil sulfur content of 2.0 percent. The sulfur content of each coal shipment is analyzed by the vendor using ASTM-4239 Method C and the data is furnished to the permittee. A log of the coal sulfur content and a record of vendor certification of the no. 6 fuel oil sulfur content must be maintained at the facility and kept available for inspection by the Technical Secretary or his representative. Compliance for the SO₂ emission rate is determined by reference to the following emission factors for bituminous coal and fuel oil combustion from AP-42:

Pollutant	Emission Factor (pounds/ ton of coal)
Sulfur dioxide	38S where S = weight % sulfur in coal
Data from AP-42 Fifth Edition, January 1995, Table 1.1-1 (enclosed as Attachment 2)	

Pollutant	Emission Factor (pounds/ 1000 gallons #6 fuel oil)
Sulfur dioxide	157S where S = weight % sulfur in coal
Data from AP-42, Table 1.3-1 (enclosed as Attachment 4)	

TAPCR 1200-03-09-.02(11) (e)1(iii)

- E4-4.** Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix for TVEE Method 2 dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11) (e)1(iii)

- E4-5.** By the provisions of Rule 1200-03-10-.02 of the Tennessee Air Pollution Control Regulations, the monitoring of opacity is required for existing coal fired steam generators having a rated capacity of more than 250 million Btu per hour. Therefore, the Technical Secretary is to be notified in writing at least ninety (90) days prior to the reactivation of Boiler #7 so that an acceptable opacity program may be developed for this boiler.
- E4-6.** Boiler #7 cannot be operated for more than 30 days after the effective date of this permit without proof in the form of an acceptable stack test that compliance with the acceptable emission standard can be achieved. The results of this stack test will be used to determine the minimum total power to the ESPs required to maintain compliance with the particulate emission limitation of condition E4-2. TAPCR 1200-03-09-.03(8)

82-0018-28 Source Description: <u>Coal Storage and Handling Operations (Original Installation) (PES B-8A)</u> Unloading and Conveying of Coal from Rail Cars to Boilers Feed Silos
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E5. Conditions E5-1 through E5-3 apply to source 82-0018-28
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E5-1. No person shall cause, suffer, allow or permit discharge of visible emissions from any fugitive dust source with an opacity in excess of ten (10) percent for an aggregate of fifteen (15) minutes. Readings are to be taken across the narrower direction if the generation site is rectangular or oblong and are to be perpendicular to the wind direction ($\pm 30^\circ$). Readings will be taken approximately every 15 seconds for any consecutive fifteen minute period and an arithmetic average used to determine compliance. Any other items not covered here will be in accordance with the general specifications of the reference method as specified in Part 1200-03-16-.01(5)(g)9.

TAPCR 1200-03-08-.02 and 1200-03-19-.05

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix for TVEE Method 2 dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E5-2. No person shall cause, suffer, allow or permit discharge of visible emissions from any storage pile in which quantities of equal to or greater than 100 tons in any one day of loose materials such as ore, sand, clinkers, aggregate, etc., are placed with an opacity in excess of ten (10) percent for an averaging time of fifteen (15) continuous minutes. Any other items not covered here will be in accordance with the general specifications of the reference method as specified in Part 1200-3-16-.01(5)(g)9.

TAPCR 1200-03-08-.02 and 1200-03-19-.05

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix dated June 18, 1996 and amended September 12, 2005 for EPA Method 9 that is enclosed as Attachment 1 (15 minute averaging).

TAPCR 1200-03-09-.02(11)(e)1.(iii)

E5-3. The wet suppression system shall be used as needed to control fugitive emissions from this source.

TAPCR 1200-03-08-.01(1)(b)

82-0018-34 Source Description:	<u>Storage Tanks for Organic Acids Manufacturing Area</u>
(PES T-6A)	

E6. Condition E6-1 applies to source 82-0018-34
--

E6-1. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix for TVEE Method 2 dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11) (e)1.(iii)

82-0018-35 Source Description:	<u>Storage Tanks for Organic Acids Manufacturing Area</u>
(PES T-2A)	

E7. Condition E7-1 applies to source 82-0018-35
--

E7-1. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix for TVEE Method 2 dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11) (e)1(iii)

82-0018-37 Source Description:	<u>Storage Tanks for Organic Acids Manufacturing Area</u>
(PES T-27A)	

E8. Condition E8-1 applies to source 82-0018-37
--

E8-1. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix for TVEE Method 2 dated June 18, 1996 and amended September 13, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11) (e)1(iii)

82-0018-40 Source Description:	<u>Acetic Anhydride Manufacturing Operation with 32</u>
<u>Furnaces</u> (PES B-7A)	

Chemical Conversion of Glacial Acetic Acid to Acetic Anhydride Natural Gas, Propane Gas, or Process Off-Gas Fired 115.2 Million Btu/Hour Nominal Heat Input

E9. Conditions E9-1 through E9-3 apply to source 82-0018-40
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E9-1. Particulate matter emitted from this source shall not exceed 0.25 pounds per hour. This emission limitation is established pursuant to Rule 1200-03-26-.02(9)(g)1. of the Tennessee Air Pollution Control Regulations and the information contained in the mutual agreement letter dated April 21, 1993.

Compliance Method: This is a process emission source whose potential to emit is less than 5 tons per year of particulate matter. By annual certification of compliance, the permittee shall be considered to meet the monitoring and related recordkeeping and reporting requirements of TAPCR 1200-03-09-.02(11)(e)1.(iii) and 1200-03-10-.04(2)(b)(1), and the compliance requirements of subpart 1200-30-09-.02(11)(e)3.(i). The permittee shall submit annually compliance certification for source 82-0018-40 (acetic anhydride manufacturing operation).

TAPCR 1200-03-09-.04(5)(c)3

- E9-2.** Operating time for this source shall not exceed 36,864 total furnace hours per year of off-gas venting.

TAPCR 1200-03-26-.02(9)(g)1.

Compliance Method: A log of the operating time of off-gas venting for this source must be maintained at the facility and kept available for inspection by the Technical Secretary or his representative.

TAPCR 1200-03-09-.02(11)(e)1.(iii)

- E9-3.** Visible and fugitive emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.01(1)

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11)(e)1(iii)

82-0018-41 Source Description:	<u>Distillation Operation for Concentration of Water/Acetic Acid Mixture</u>
(PES B-2A-1)	
(8) Distillation Units	

E10. Condition E10-1 applies to source 82-0018-41
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- E10-1.** Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix for TVEE Method 2 dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-3-9-.02(11)(e)1(iii)

82-0018-42 Source Description: Manufacturing of Acetic Anhydride (PES B-20A)
16 Furnaces-Natural Gas or Off-gas fired
64 Million Btu/Hour Nominal Heat Input

E11. Condition E11-1 applies to source 82-0018-42

E11-1. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix for TVEE Method 2 dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11)(e)1(iii)

82-0018-43 Source Description: Acetic Acid Recovery System (PES B-2A-2)
Feed Heater for Removal of Acetic Acid from Sludge

E12. Condition E12-1 applies to source 82-0018-43

E12-1. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix for TVEE Method 2 dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11)(e)1(iii)

82-0018-44 Source Description: Crude Acetic Anhydride Refining Process (PES B-6A-1)
Nine Refining Units

E13. Condition E13-1 applies to source 82-0018-44

E13-1. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for an aggregate of no more than five (5) minutes in

any one (1) hour period, and no more than twenty (20) minutes in any twenty-four (24) hour period. Visible emissions from this source shall be determined by Tennessee Visible Emission Evaluation Method 2, as adopted by the Tennessee Air Pollution Control Board on August 24, 1984 (aggregate count). TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix for TVEE Method 2 dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11)(e)1(iii)

82-0018-50 Source Description: Coal Handling System for Area A (PES B-40A)

Coal Crusher, Conveyors, and Screens
Bagfilter, Enclosures, and Wet Suppression Controls
NSPS

E14. Conditions E14-1 through E14-3 apply to source 82-0018-50

E14-1. Particulate matter emitted from this operation shall not exceed 1.5 pounds per hour. TAPCR 1200-03-07-.01(5)

Compliance Method: The wet suppression system and baghouse shall be inspected monthly during any month that the source operates and maintained to insure proper operation. A log of inspections and maintenance activities shall be maintained and kept available for inspection by the Technical Secretary or his representative.
TAPCR 1200-03-09-.02(11)(e)1(iii)

E14-2. Visible and fugitive emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.01(1)

Compliance Method: The permittee shall assure compliance with the opacity standard by utilizing the opacity matrix dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E14-3. Wet suppression system must be used to control fugitive emissions from the track hopper and feeder conveyor drop points.

TAPCR 1200-03-08-.01(1)(b)

82-0018-54 Source Description: (2) Natural Gas Fired Boilers (PES B-8-41A)

Units #8 and #9, Low NO_x burners with flue gas recirculation, Stacks 8-41A-1 and 8-41A-2
#2 Fuel Oil Back-up
NSPS

E15. Conditions E15-1 through E15-7 apply to source 82-0018-54

E15-1. The maximum rated heat input capacity for this source shall not exceed 180,000,000 British Thermal Units per hour (180MMBtu/Hr), on a daily average basis.

Compliance Method: Compliance with this limit is demonstrated by the information maintained in the records required by Condition **E15-3**.

E15-2. Only natural gas or #2 fuel oil shall be used as fuel(s) for this source.

Compliance Method: Compliance with this limit is demonstrated by the information maintained in the records required by Condition E15-3.

E15-3. The permittee shall maintain a record of the type of fuel used (natural gas or #2 fuel oil) for each boiler, as well as certification from the fuel supplier of the sulfur content by weight of each shipment of fuel oil fuel usage, and actual heat input at this source, in a form that readily shows compliance with Condition(s) E15-1, and E15-2, must be maintained at the source location and kept available for inspection by the Technical Secretary or his representative in tables that contain the same information as that outlined in the following example tables. All data, including all required calculations, must be entered into the log no later than seven (7) days from the end of the day for which the data is required. All data, including all required calculations, must be entered into the log no later than thirty (30) days from the end of the month for which the data is required. The permittee shall retain this record at the source location for a period of not less than five (5) years.

MONTHLY LOG: Source 82-0018-54, Calculation of Heat Input for Boiler # ----.

Month			Year:		
Date	Type of Fuel Used	Fuel Usage per Hour	Hours of Operation	Heat Input Rate per Hour*	MMBtu per hour, Daily Average
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					

18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
Total					

E15-4. Particulate matter emitted from this source shall not exceed 3.4 pounds per hour, not to exceed 14.9 tons per year. This emission limitation is established pursuant to Rule 1200-03-06-.01(7) of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letter dated February 11, 2000 from the permittee.

Compliance Method: compliance with the particulate matter limitation is determined by: (a) the AP-42 emission factors for fuel oil and natural gas combustion:

<u>Pollutant</u>	<u>Emission Factor (pounds/ 1000 gallons #2 fuel oil)</u>
Particulate matter	2

Data from AP-42, Table 1.3-1 (enclosed as Attachment 4)

<u>Pollutant</u>	<u>Emission Factor (pounds/ 10⁶ cubic feet natural gas)</u>
Particulate matter	7.6

Data from AP-42, Table 1.4-2 (enclosed as Attachment 3)

(b) the results of stack testing conducted on January 4 through 6, 2001. From test results, the maximum emission rate was 0.34 pound per hour from natural gas, and 0.53 pound per hour from #2 fuel oil.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E15-5. Sulfur dioxide (SO₂) emitted from this source shall not exceed 39.9 tons per year. This emission limitation is established pursuant to Rule 1200-03-14-.01(3) of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letter dated February 11, 2000 from the permittee.

Compliance Method: compliance with the SO₂ limitation shall be assured by: (a) the following AP-42 emission factors for fuel oil and natural gas combustion:

<u>Pollutant</u>	<u>Emission Factor (pounds/ 1000 gallons #2 fuel oil)</u>
Sulfur dioxide	142S where S = weight % sulfur in coal

Data from AP-42, Table 1.3-1 (enclosed as Attachment 4)

<u>Pollutant</u>	<u>Emission Factor (pounds/ 10⁶ cubic feet natural gas)</u>
Sulfur dioxide	0.6

Data from AP-42, Table 1.4-2 (enclosed as Attachment 3)

(b) recordkeeping as follows: sulfur content of #2 fuel oil (supplier certification), #2 fuel oil usage, and natural gas usage shall be tracked to calculate SO₂ emissions rate by the following equations:

SO₂ emissions from fuel oil combustion (tons/year) = [(GPY/ 1000) x (F) x (S)] / 2000, where

GPY= gallons per year of fuel used

F = fuel factor (142 for #2 fuel oil)

S = average sulfur content of fuel in weight percent

SO₂ emissions from natural gas combustion (tons/year) = (Natural Gas Usage (MMscf/year) * F) / 2000, where

MMscf = million standard cubic feet

F = AP-42 Emission Factor (0.6 lb/10⁶ ft³ of Natural Gas)

Total SO₂ emissions (tons per year) = SO₂ emissions from fuel oil combustion + SO₂ emissions from natural gas combustion

The SO₂ emission rate calculation results shall be reported in the semiannual reports of condition E2.

TAPCR 1200-03-09-.02(11)(e)1(iii)

E15-6. Nitrogen oxides (NO_x) emitted from this source shall not exceed 39.9 tons per year. This emission limitation is established pursuant to Rule 1200-03-06-.01(7) of the Tennessee Air Pollution Control Regulations and the information contained in the agreement letter dated February 11, 2000 from the permittee.

Compliance Method: compliance with the NO_x limitation shall be assured by: (a) the following AP-42 emission factors for fuel oil and natural gas combustion:

<u>Pollutant</u>	<u>Emission Factor (pounds/ 1000 gallons #2 fuel oil)</u>
Nitrogen oxides	20
Data from AP-42, Table 1.3-1 (enclosed as Attachment 4)	

<u>Pollutant</u>	<u>Emission Factor (pounds/ 10⁶ cubic feet natural gas)</u>
Nitrogen oxides	32
Data from AP-42, Table 1.4-1 (enclosed as Attachment 3)	

(b) Within 180 days of restarting this source the permittee shall conduct a stack test and establish a monitoring plan through either continuous or parametric monitoring to assure compliance with the NO_x emission limit. The NO_x monitoring results shall be reported in the semiannual reports of condition E2.

TAPCR 1200-03-09-.02(11)(e)1(iii)

15-7. Visible emissions from this source shall not exhibit greater than twenty percent (20%) opacity, except for one (1) six-minute period in any one (1) hour period and for no more than four (4) six-minute periods in any twenty-four (24) hour period. Visible emissions from this source shall be determined by EPA Method 9, as published in the current 40 CFR 60, Appendix A (six-minute average). TAPCR 1200-03-05-.03(6) and TAPCR 1200-03-05-.01(1)

Compliance Method: Compliance with this standard shall be determined by the procedures specified in the Division's Opacity Matrix for TVEE Method 2 dated June 18, 1996 and amended September 11, 2013 that is enclosed as Attachment 1.

If the magnitude and frequency of excursions reported by the permittee in the periodic monitoring for emissions is unsatisfactory to the Technical Secretary, this permit may be reopened to impose additional opacity monitoring requirements.

TAPCR 1200-03-09-.02(11)(e)1(iii)

Permit Number: 568191

Expiration Date:

END OF PERMIT NUMBER: 568191

Permit Number:

Expiration Date:

ATTACHMENT 1

**Opacity Matrix Decision Tree for Visible Emission Evaluation by
TVEE Method 2 and EPA Method 9, Dated June 18, 1996 and
Amended September 11, 2013**

**Decision Tree PM for Opacity for
Sources Subject to Rule 1200-03-05-.01
Utilizing TVEE Method 2**

Notes:

PM = Periodic Monitoring required by 1200-3-9-.02(11)(e)(iii).

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emission standards in paragraph 1200-3-5-.01. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

Examine each emission unit using this Decision Tree to determine the PMT required.

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing Tennessee Visible Emission Evaluation Method 2. The observer must be properly certified according to the criteria specified in EPA Method 9 to conduct TVEE Method 2 evaluations.

Typical Pollutants
Particulates, VOC, CO, SO₂, NO_x, HCl, HF, HBr, Ammonia, and Methane.

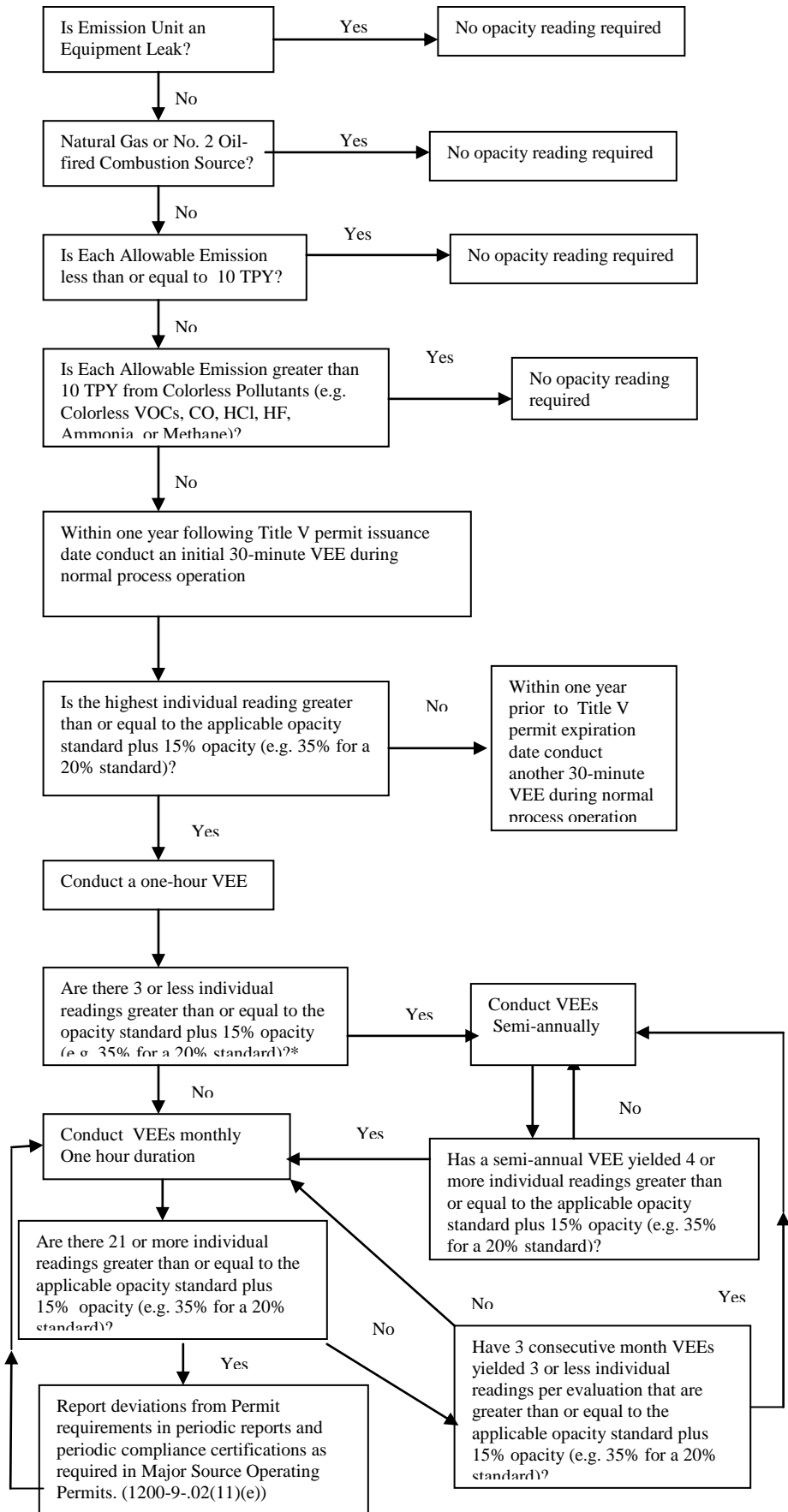
Initial observations are to be repeated within 90 days of startup of a modified source, if a new construction permit is issued for modification of the source.

A VEE conducted by TAPCD personnel after the Title V permit is issued will also constitute an initial reading.

Reader Error
TVEE Method 2: The TAPCD declares non-compliance when 21 observations are read at the standard plus 15% opacity (e.g. 35% for a 20% standard).

*The rationale for this is the fact that Rule 1200-3-5-.01 allows for an exemption of 5 minutes (20 readings) per hour and up to 20 minutes (80 readings) per day. With 4 or more excessive individual readings per hour the possibility of a daily exceedance exists.

Note: A company could mutually agree to have all of its sources regulated by EPA Method 9. Caution: Agreement to use Method 9 could potentially place some sources in non-compliance with visible emission standards. Please be sure before you agree.



Decision Tree PM for Opacity for Sources Utilizing EPA Method 9*

Notes:

PM = Periodic Monitoring required by 1200-03-09-.02(11)(e)(iii).

This Decision Tree outlines the criteria by which major sources can meet the periodic monitoring and testing requirements of Title V for demonstrating compliance with the visible emission standards set forth in the permit. It is not intended to determine compliance requirements for EPA's Compliance Assurance Monitoring (CAM) Rule (formerly referred to as Enhanced Monitoring – Proposed 40 CFR 64).

Examine each emission unit using this Decision Tree to determine the PM required.*

Use of continuous emission monitoring systems eliminates the need to do any additional periodic monitoring.

Visible Emission Evaluations (VEEs) are to be conducted utilizing EPA Method 9. The observer must be properly certified to conduct valid evaluations.

Typical Pollutants

Particulates, VOC, CO, SO₂, NO_x, HCl, HF, HBr, Ammonia, and Methane.

Initial observations are to be repeated within 90 days of startup of a modified source, if a new construction permit is issued for modification of the source.

A VEE conducted by TAPCD personnel after the Title V permit is issued will also constitute an initial reading.

Reader Error

EPA Method 9, Non-NSPS or NESHAPS stipulated opacity standards:

The TAPCD guidance is to declare non-compliance when the highest six-minute average** exceeds the standard plus 6.8% opacity (e.g. 26.8% for a 20% standard).

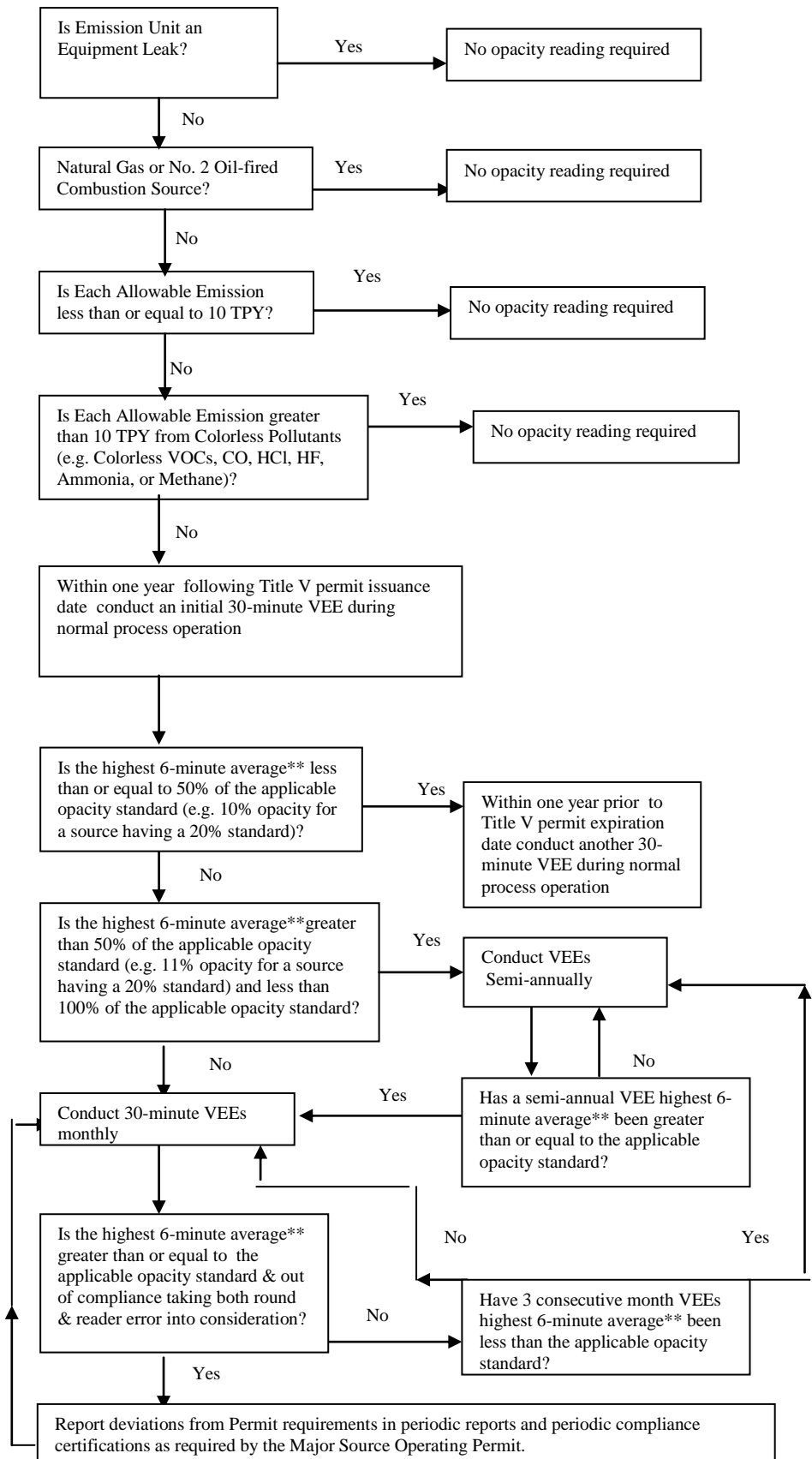
EPA Method 9, NSPS or NESHAPS stipulate opacity standards:

EPA guidance is to allow only engineering round. No allowance for reader error is given.

*Not applicable to Asbestos manufacturing subject to 40 CFR 61.142

**Or second highest six-minute average, if the source has an exemption period stipulated in either the regulations or in the permit.

Dated June 18, 1996
Amended September 11, 2013



ATTACHMENT 2

AP-42 Fifth Edition Table 1.1-1 for Coal Combustion Emission Factors

ATTACHMENT 3

AP-42 Emission Factors from Natural Gas Combustion

Table 1.4-1. EMISSION FACTORS FOR NITROGEN OXIDES (NO_x) AND CARBON MONOXIDE (CO) FROM NATURAL GAS COMBUSTION^a

Combustor Type (MMBtu/hr Heat Input) [SCC]	NO _x ^b		CO	
	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
Large Wall-Fired Boilers (>100) [1-01-006-01, 1-02-006-01, 1-03-006-01]				
Uncontrolled (Pre-NSPS) ^c	280	A	84	B
Uncontrolled (Post-NSPS) ^c	190	A	84	B
Controlled - Low NO _x burners	140	A	84	B
Controlled - Flue gas recirculation	100	D	84	B
Small Boilers (<100) [1-01-006-02, 1-02-006-02, 1-03-006-02, 1-03-006-03]				
Uncontrolled	100	B	84	B
Controlled - Low NO _x burners	50	D	84	B
Controlled - Low NO _x burners/Flue gas recirculation	32	C	84	B
Tangential-Fired Boilers (All Sizes) [1-01-006-04]				
Uncontrolled	170	A	24	C
Controlled - Flue gas recirculation	76	D	98	D
Residential Furnaces (<0.3) [No SCC]				
Uncontrolled	94	B	40	B

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. Emission factors are based on an average natural gas higher heating value of 1,020 Btu/scf. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value.

SCC = Source Classification Code. ND = no data. NA = not applicable.

^b Expressed as NO₂. For large and small wall fired boilers with SNCR control, apply a 24 percent reduction to the appropriate NO_x emission factor. For tangential-fired boilers with SNCR control, apply a 13 percent reduction to the appropriate NO_x emission factor.

^c NSPS=New Source Performance Standard as defined in 40 CFR 60 Subparts D and Db. Post-NSPS units are boilers with greater than 250 MMBtu/hr of heat input that commenced construction modification, or reconstruction after August 17, 1971, and units with heat input capacities between 100 and 250 MMBtu/hr that commenced construction modification, or reconstruction after June 19, 1984.

TABLE 1.4-2. EMISSION FACTORS FOR CRITERIA POLLUTANTS AND GREENHOUSE GASES FROM NATURAL GAS COMBUSTION^a

Pollutant	Emission Factor (lb/10 ⁶ scf)	Emission Factor Rating
CO ₂ ^b	120,000	A
Lead	0.0005	D
N ₂ O (Uncontrolled)	2.2	E
N ₂ O (Controlled-low-NO _x burner)	0.64	E
PM (Total) ^c	7.6	D
PM (Condensable) ^c	5.7	D
PM (Filterable) ^c	1.9	B
SO ₂ ^d	0.6	A
TOC	11	B
Methane	2.3	B
VOC	5.5	C

^a Reference 11. Units are in pounds of pollutant per million standard cubic feet of natural gas fired. Data are for all natural gas combustion sources. To convert from lb/10⁶ scf to kg/10⁶ m³, multiply by 16. To convert from lb/10⁶ scf to lb/MMBtu, divide by 1,020. The emission factors in this table may be converted to other natural gas heating values by multiplying the given emission factor by the ratio of the specified heating value to this average heating value. TOC = Total Organic Compounds. VOC = Volatile Organic Compounds.

^b Based on approximately 100% conversion of fuel carbon to CO₂. CO₂[lb/10⁶ scf] = (3.67) (CON) (C) (D), where CON = fractional conversion of fuel carbon to CO₂, C = carbon content of fuel by weight (0.76), and D = density of fuel, 4.2x10⁴ lb/10⁶ scf.

^c All PM (total, condensable, and filterable) is assumed to be less than 1.0 micrometer in diameter. Therefore, the PM emission factors presented here may be used to estimate PM₁₀, PM_{2.5} or PM₁ emissions. Total PM is the sum of the filterable PM and condensable PM. Condensable PM is the particulate matter collected using EPA Method 202 (or equivalent). Filterable PM is the particulate matter collected on, or prior to, the filter of an EPA Method 5 (or equivalent) sampling train.

^d Based on 100% conversion of fuel sulfur to SO₂. Assumes sulfur content is natural gas of 2,000 grains/10⁶ scf. The SO₂ emission factor in this table can be converted to other natural gas sulfur contents by multiplying the SO₂ emission factor by the ratio of the site-specific sulfur content (grains/10⁶ scf) to 2,000 grains/10⁶ scf.

ATTACHMENT 4

AP-42 Emission Factors from Fuel Oil Combustion

Table 1.3-1. CRITERIA POLLUTANT EMISSION FACTORS FOR FUEL OIL COMBUSTION^a

Firing Configuration (SCC) ^a	SO ₂ ^b		SO ₃ ^c		NO _x ^d		CO ^e		Filterable PM ^f	
	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING
Boilers > 100 Million Btu/hr										
No. 6 oil fired, normal firing (1-01-004-01), (1-02- 004-01), (1-03-004-01)	157S	A	5.7S	C	47	A	5	A	9.19(S)+3. 22	A
No. 6 oil fired, normal firing, low NO _x burner (1-01-004-01), (1-02- 004-01)	157S	A	5.7S	C	40	B	5	A	9.19(S)+3. 22	A
No. 6 oil fired, tangential firing, (1-01-004-04)	157S	A	5.7S	C	32	A	5	A	9.19(S)+3. 22	A
No. 6 oil fired, tangential firing, low NO _x burner (1-01-004-04)	157S	A	5.7S	C	26	E	5	A	9.19(S)+3. 22	A
No. 5 oil fired, normal firing (1-01-004-05), (1-02- 004-04)	157S	A	5.7S	C	47	B	5	A	10	B
No. 5 oil fired, tangential firing (1-01-004-06)	157S	A	5.7S	C	32	B	5	A	10	B
No. 4 oil fired, normal firing (1-01-005-04), (1-02- 005-04)	150S	A	5.7S	C	47	B	5	A	7	B
No. 4 oil fired, tangential firing (1-01-005-05)	150S	A	5.7S	C	32	B	5	A	7	B
No. 2 oil fired (1-01-005-01), (1-02- 005-01), (1-03-005-01)	157S	A	5.7S	C	24	D	5	A	2	A
No. 2 oil fired, LNB/FGR, (1-01-005-01), (1-02- 005-01), (1-03-005-01)	157S	A	5.7S	A	10	D	5	A	2	A

TABLE 1.3-1. CRITERIA POLLUTANT EMISSION FACTORS FOR FUEL OIL COMBUSTION^a

Firing Configuration (SCC) ^a	SO ₂ ^b		SO ₃ ^c		NO _x ^d		CO ^e		Filterable PM ^f	
	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING
Boilers < 100 Million Btu/hr										
No. 6 oil fired (1-02-004-02/03) (1-03-004-02/03)	157S	A	2S	A	55	A	5	A	10	B
No. 5 oil fired (1-03-004-04)	157S	A	2S	A	55	A	5	A	9.19(S)+3.22	A
No. 4 oil fired (1-03-005-04)	150S	A	2S	A	20	A	5	A	7	B
Distillate oil fired (1-02-005-02/03) (1-03-005-02/03)	142S	A	2S	A	20	A	5	A	2	A
Residential furnace (A2104004/A2104011)	142S	A	2S	A	18	A	5	A	0.4 ^g	B

^a To convert from lb/10³ gal to kg/10³ L, multiply by 0.120. SCC=Source Classification Code.

^b References 1-2, 6-9, 14, 56-60. S indicates that the weight % of sulfur in the oil should be multiplied by the value given. For example, if the fuel is 1% sulfur, then S=1.

^c References 1-2, 6-8, 16, 57-60. S indicates that the weight % of sulfur in the oil should be multiplied by the value given. For example, if the fuel is 1% sulfur, then S=1.

^d References 6-7, 15, 19, 22, 56-62. Expressed as NO₂. Test results indicate that at least 95% by weight of NO_x is NO for all boiler types except residential furnaces, where about 75% is NO. For utility vertical fired boilers use 105 lb/10³ gal at full load and normal (>15%) excess air. Nitrogen oxides emissions from residential oil combustion in industrial and commercial boilers are related to fuel nitrogen content, estimated by the following empirical relationship: lb NO₂/10³ gal = 20.54 + 104.39(N), where N is the weight % of nitrogen in oil. For example, if the fuel is 1% nitrogen, then N = 1.

^e References 6-8, 14, 17-19, 56-61. CO emissions may increase by factors of 10 to 100 if the unit is improperly operated or not well maintained.

^f References 6-8, 10, 13-15, 56-60, 62-63. Filterable PM is that particulate collected on or prior to the filter of an EPA Method 5 (or equivalent) sampling train. Particulate emission factors for residual oil combustion are, on

the average, a function of fuel oil sulfur content where S is the weight % of sulfur in oil. For example, if fuel is 1% sulfur, then S =1.

^g Based on data from new burner designs. Pre-1970's burner designs may emit filterable PM as high as 3.0 lb/10³ gal.

Table 1.3-2. CONDENSABLE PARTICULATE MATTER EMISSION FACTORS FOR OIL COMBUSTION^a

Firing Configuration ^b (SCC)	Controls	CPM - TOT ^{c,d}		CPM-IOR ^{c,d}		CPM-ORG ^{c,d}	
		Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING	Emission Factor (lb/10 ³ gal)	EMISSION FACTOR RATING
No. 2 oil fired (1-01-005-01, 1-02-005-01, 1-03-005-01)	All controls, or uncontrolled	1.3 ^{d,e}	D	65% of CPM-TOT emission factor ^c	D	35% of CPM-TOT emission factor ^c	D
No. 6 oil fired (1-01-004-01/04, 1-02-004-01, 1-03-004-01)	All controls, or uncontrolled	1.5 ^f	D	85% of CPM-TOT emission factor ^d	E	15% of CPM-TOT emission factor ^d	E

^a All condensable PM is assumed to be less than 1.0 micron in diameter.

^b No data are available for numbers 3,4, and 5 oil. For number 3 oil, use the factors provided for number 2 oil. For numbers 4 and 5 oil, use the factors provided for number 6 oil.

^c CPM-TOT = total condensable particulate matter.
CPM-IOR = inorganic condensable particulate matter.
CPM-ORG = organic condensable particulate matter.

^d To convert to lb/MMBtu of No. 2 oil, divide by 140 MMBtu/10³ gal. To convert to lb/MMBtu of No. 6 oil, divide by 150 MMBtu/10³ gal.

^e References 76-78.

^f References 79-82

Table 1.3-3. EMISSION FACTORS FOR TOTAL ORGANIC COMPOUNDS (TOC), METHANE, AND NONMETHANE TOC (NMTOC) FROM UNCONTROLLED FUEL OIL COMBUSTION^a

EMISSION FACTOR RATING: A

Firing Configuration (SCC)	TOC ^b Emission Factor (lb/10 ³ gal)	Methane ^b Emission Factor (lb/10 ³ gal)	NMTOC ^b Emission Factor (lb/10 ³ gal)
Utility boilers			
No. 6 oil fired, normal firing (1-01-004-01)	1.04	0.28	0.76
No. 6 oil fired, tangential firing (1-01-004-04)	1.04	0.28	0.76
No. 5 oil fired, normal firing (1-01-004-05)	1.04	0.28	0.76
No. 5 oil fired, tangential firing (1-01-004-06)	1.04	0.28	0.76
No. 4 oil fired, normal firing (1-01-005-04)	1.04	0.28	0.76
No. 4 oil fired, tangential firing (1-01-005-05)	1.04	0.28	0.76
Industrial boilers			
No. 6 oil fired (1-01-004-01/02/03)	1.28	1.00	0.28
No. 5 oil fired (1-01-004-04)	1.28	1.00	0.28
Distillate oil fired (1-02-005-01/02/03)	0.252	0.052	0.2
No. 4 oil fired (1-02-005-04)	0.252	0.052	0.2
Commercial/institutional/residential combustors			
No. 6 oil fired (1-03-004-01/02/03)	1.605	0.475	1.13
No. 5 oil fired (1-03-004-04)	1.605	0.475	1.13
Distillate oil fired (1-03-005-01/02/03)	0.556	0.216	0.34
No. 4 oil fired (1-03-005-04)	0.556	0.216	0.34
Residential Furnaces (A2104004/A2104011)	2.493	1.78	0.713

^a To convert from lb/10³ gal to kg/10³ L, multiply by 0.12. SCC=Source Classification Code.

^b References 29-32. Volatile organic compound emissions can increase by several orders of magnitude if the boiler is improperly operated or is not well maintained.

